



ORIGINAL



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Leland R. Snook
Director
State Regulation & Pricing

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Fax 602-250-3003
e-mail Leland.Snook@aps.com

Mail Station 9708
PO Box 53999
Phoenix, Arizona 85072-3999

September 1, 2009

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

RE: APS COMPLIANCE WITH DECISION NO. 70667 – APS/PINNACLE WEST COMMUNICATIONS WITH CREDIT RATING AGENCIES
Docket No. E-01345A-08-0172

Attached please find copies of Arizona Public Service Company (APS) and Pinnacle West's available past communications with credit rating agencies, submitted pursuant to Decision No. 70667 (December 24th, 2008). That Decision states as follows:

"Arizona Public Service Company shall file all currently existing communications within 10 days of the effective date of this Decision and shall file future communication on a monthly basis. The first such monthly report shall be due on February 1, 2009, and the monthly filing shall continue until the conclusion of Arizona Public Service Company's general rate case. Thereafter, Arizona Public Service Company shall make such filings on a six month basis, with the first filing due by January 1, 2010."

This monthly filing covers the communications with rating agencies from August 5, 2009 through August 30, 2009. If you have any questions or concerns, please contact Susan Casady at (602)250-2709.

Sincerely,

Leland R. Snook

LS/dst

Attachments

CC: Steve Olea
Brian Bozzo
Barbara Keene
Terri Ford

Arizona Corporation Commission
DOCKETED

SEP - 1 2009

DOCKETED BY

AZ CORP COMMISSION
DOCKET CONTROL

2009 SEP - 1 P 3:13

RECEIVED

Rating Agency Communication Log

Date	Person	APS/PNW Personnel	Subject	Comment
8/6/2009	Christine Scaperdas, S&P	Karen Dolyniuk	E-mail to S&P re Coconino lc	
8/6/2009	Tara Mangaroo, Moodys	Karen Dolyniuk	E-mail to Moody's re Coconino lc	
8/6/2009	Trudy Zibit, Fitch	Karen Dolyniuk	E-mail to Fitch re Coconino lc	
8/7/2009	Tara Mangaroo, Moodys	Karen Dolyniuk	E-mail from Moody's re Coconino lc	
8/7/2009	Tara Mangaroo, Moodys	Karen Dolyniuk	E-mail to Moody's re Coconino lc	
8/7/2009	Trudy Zibit, Fitch	Karen Dolyniuk	E-mail from Fitch re Coconino lc	
8/7/2009	Trudy Zibit, Fitch	Karen Dolyniuk	E-mail to Fitch re Coconino lc	
8/10/2009	Trudy Zibit, Fitch	Karen Dolyniuk	E-mail to Fitch re Coconino lc	
8/10/2009	Trudy Zibit, Fitch	Karen Dolyniuk	E-mail from Fitch re Coconino lc	
8/10/2009	Trudy Zibit, Fitch	Karen Dolyniuk	E-mail to Fitch re Coconino lc	
8/11/2009	Laura Schumacher, Moodys	Jim McGill	E-mail to Moody's re Industry Outlook article	
8/12/2009	Mitchell Moss, Moodys	Jim McGill	E-mail from Moody's re Industry Outlook article	
8/12/2009	Mitchell Moss, Moodys	Jim McGill	E-mail to Moody's re Industry Outlook article	
8/12/2009	Christine Scaperdas, S&P	Karen Dolyniuk	E-mail to S&P re Coconino lc	
8/12/2009	Christine Scaperdas, S&P	Karen Dolyniuk	E-mail to S&P re Coconino lc	
8/12/2009	Tara Mangaroo, Moodys	Karen Dolyniuk	E-mail to Moody's re Coconino lc	
8/12/2009	Tara Mangaroo, Moodys	Karen Dolyniuk	E-mail to Moody's re Coconino lc	
8/13/2009	Laura Schumacher, Moodys	Jim McGill	E-mail from Moody's with ratings methodology article	
8/17/2009	Mitchell Moss, Moodys	Jim McGill	E-mail to Moody's with ratings methodology article	
8/17/2009	Mitchell Moss, Moodys	Jim McGill	E-mail from Moody's with ratings methodology article	
8/17/2009	Mitchell Moss, Moodys	Jim McGill	E-mail to Moody's with ratings methodology article	
8/17/2009	Mitchell Moss, Moodys	Jim McGill	E-mail from Moody's with ratings methodology article	
8/17/2009	Mitchell Moss, Moodys	Jim McGill	E-mail to Moody's with ratings methodology article	

McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Thursday, August 06, 2009 1:27 PM
To: 'christine_scaperdas@standardandpoors.com'
Cc: McGill, James T(Z71171)
Subject: Arizona Public Service Company - Coconino Bonds

Hi Christine! We spoke a couple of weeks ago regarding the Coconino County bonds 1996A and 1999 Series. We are getting close to having documents to forward to you. I wanted to verify which documents you will need to see.

Please verify the documents you will need from us:

Indenture and Series Indenture
Loan Agreement
Letter of Credit
Reimbursement Agreement
Official Statement
Remarketing Agreement

Also, please let me know if there is anything else you need. If you could, would you let me know about how long your review will take and when we can expect at least preliminary ratings? We are planning on pricing and closing this transaction on 9/15/09.

Thank you!

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Thursday, August 06, 2009 2:50 PM
To: 'Mangaroo, Chetara'
Cc: McGill, James T(Z71171)
Subject: RE: APS - Coconino Bonds

Hi Tara! We are getting close to having documents to forward to you. We are anticipating that we will be sending documents out next week.

We will send the documents you listed below. Will you also want to see Official Statement or the Remarketing Agreement? Also, when you mention Distribution List - what exactly are you referring to?

We are planning on pricing and closing this deal on September 15th. Given that, when do you think we will have a ratings letter from you?

Thanks for your help!

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

From: Mangaroo, Chetara [mailto:Chetara.Mangaroo@moodys.com]
Sent: Friday, July 17, 2009 8:29 AM
To: Dolyniuk, Karen E(J97440)
Subject: RE: APS - Coconino Bonds

Hi Karen,

In order to assign an analyst I will need the amended (LOC, Reimbursement Agreement, Trust Indenture, Cusip & Distribution List) When is the Closing, Pricing & Printing?.

Thanks!

Tara Mangaroo
Senior Statistical Analyst

Moody's Investors Service
7 World Trade Center at 250 Greenwich Street
Public Finance Group - 23rd Floor
New York, NY 10007
Tel: (212)-553-4441
Fax: (212)-298-6416
chetara.mangaroo@moodys.com

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rating fee information. Please do not include analysts in any fee related correspondence. If you have any questions or comments regarding the application or the fees, please contact Moody's Issuer Relations Team at 212.553.4055.

-----Original Message-----

From: Vennekotter, Sarah
Sent: Friday, July 17, 2009 11:14 AM
To: Schumacher, Laura; Von Bargaen, Lauren
Cc: Mangaroo, Chetara
Subject: RE: APS - Coconino Bonds

Laura,

Tara Mangaroo is the MSPG deal coordinator. She can assign an analyst to the transaction.

Thanks,
Sarah

From: Schumacher, Laura
Sent: Friday, July 17, 2009 10:47 AM
To: Von Bargaen, Lauren; Vennekotter, Sarah
Subject: FW: APS - Coconino Bonds

Lauren and Sarah, may I give one of your names to APS as a contact for the LOC backed IRB offering they are preparing?

Thanks,
Laura

-----Original Message-----

From: Karen.Dolyniuk@aps.com [mailto:Karen.Dolyniuk@aps.com]
Sent: Friday, July 17, 2009 10:06 AM
To: Schumacher, Laura
Cc: James.McGill@pinnaclewest.com
Subject: APS - Coconino Bonds

Laura, as you are probably aware, last September, APS bought in two series of tax exempt bonds - Coconino 1996 and Coconino 1999. The intention was always to find a bank(s) to provide a letter of credit. We are beginning the process of putting an LC and reimbursement agreement in place to support these bonds.

Would you direct me to the person at Moody's who would be reviewing documents and doing the analysis. I would like to find out about the process and the length of time needed in order to build this into our timeline.

Thanks!

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
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Phone: 602-250-5630

Email Firewall made the following annotations

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McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Thursday, August 06, 2009 3:01 PM
To: 'trudy.zibit@fitchratings.com'
Cc: McGill, James T(Z71171)
Subject: Arizona Public Service Company

Trudy, your name was given to me by Phil Smyth. We are working on enhancing some of our tax exempt bonds by adding a Letter of Credit. We are getting close to having documents we would like to forward on to you. I wanted to find out from you what documents you will need. We are anticipating closing this transaction on September 15th.

These are the documents I think you might want:

Loan Agreement
Indenture/Series Indenture
Letter of Credit
Reimbursement Agreement
Official Statement
Remarketing Agreement (?)

The bonds we are working on are Coconino County, Arizona Pollution Control Corporation Pollution Control Revenue Refunding Bonds (Arizona Public Service Company) 1996A and 1999 Series.

Please let me know what else you might need from us. Thank you for your help.

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

McGill, James T(Z71171)

From: Mangaroo, Chetara [Chetara.Mangaroo@moodys.com]
Sent: Friday, August 07, 2009 6:50 AM
To: Dolyniuk, Karen E(J97440)
Cc: McGill, James T(Z71171)
Subject: RE: APS - Coconino Bonds

That would be great if you can send over the documents next week and if the OS and the remarketing agreement is available that will be helpful as well, the distribution list is the working group list or the parties list, and if the week of Sept. 7th work for you for a rating that would be great.

Thanks!

Tara Mangaroo**Senior Statistical Analyst****Moody's Investors Service**

7 World Trade Center at 250 Greenwich Street

Public Finance Group - 23rd Floor

New York, NY 10007

Tel: (212)-553-4441

Fax: (212)-298-6416

chetara.mangaroo@moodys.com

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-----Original Message-----

From: Karen.Dolyniuk@pinnaclewest.com [mailto:Karen.Dolyniuk@pinnaclewest.com]
Sent: Thursday, August 06, 2009 5:50 PM
To: Mangaroo, Chetara
Cc: James.McGill@pinnaclewest.com
Subject: RE: APS - Coconino Bonds

Hi Tara! We are getting close to having documents to forward to you. We are anticipating that we will be sending documents out next week.

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From: Mangaroo, Chetara [mailto:Chetara.Mangaroo@moodys.com]
Sent: Friday, July 17, 2009 8:29 AM
To: Dolyniuk, Karen E(J97440)
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Hi Karen,

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From: Vennekotter, Sarah
Sent: Friday, July 17, 2009 11:14 AM
To: Schumacher, Laura; Von Bargaen, Lauren
Cc: Mangaroo, Chetara
Subject: RE: APS - Coconino Bonds

Laura,

Tara Mangaroo is the MSPG deal coordinator. She can assign an analyst to the transaction.

Thanks,
Sarah

From: Schumacher, Laura
Sent: Friday, July 17, 2009 10:47 AM
To: Von Bargen, Lauren; Vennekotter, Sarah
Subject: FW: APS - Coconino Bonds

Lauren and Sarah, may I give one of your names to APS as a contact for the LOC backed IRB offering they are preparing?

Thanks,
Laura

-----Original Message-----

From: Karen.Dolyniuk@aps.com [mailto:Karen.Dolyniuk@aps.com]
Sent: Friday, July 17, 2009 10:06 AM
To: Schumacher, Laura
Cc: James.McGill@pinnaclewest.com
Subject: APS - Coconino Bonds

Laura, as you are probably aware, last September, APS bought in two series of tax exempt bonds - Coconino 1996 and Coconino 1999. The intention was always to find a bank(s) to provide a letter of credit. We are beginning the process of putting an LC and reimbursement agreement in place to support these bonds.

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McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Friday, August 07, 2009 7:35 AM
To: 'Mangaroo, Chetara'
Cc: McGill, James T(Z71171)
Subject: RE: APS - Coconino Bonds

Great - I will send the documents early to mid week, next week. The week of September 7th works, and if 9/8 would work that would be great, we are planning on mailing the OS on 9/8.

Thanks again!

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

From: Mangaroo, Chetara [mailto:Chetara.Mangaroo@moodys.com]
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Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

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McGill, James T(Z71171)

From: trudy.zibit@fitchratings.com
Sent: Friday, August 07, 2009 7:41 AM
To: Dolyniuk, Karen E(J97440)
Cc: McGill, James T(Z71171)
Subject: Re: Arizona Public Service Company

Hi Karen,

Thanks for your email. You have listed the correct documents that we will need to see. Please also include a distribution list and a timing schedule. I hope that we can receive the documents early next week so that we will have sufficient time to work on this. Given vacation schedules of people in my group, I want to make sure that I can assign this to someone who will be able to immediately start working on the review.

Trudy

Trudy Zibit
Managing Director
Municipal Structured Finance,
Public Finance
One State Street Plaza
T 212 908-0689 / 800 75 FITCH
F 212 612-7797
E trudy.zibit@fitchratings.com

Karen.Dolyniuk@pinnaclewest.com

08/06/2009 06:01
PM

trudy.zibit@fitchratings.com To
James.McGill@pinnaclewest.com cc
Subject
Arizona Public Service Company

Trudy, your name was given to me by Phil Smyth. We are working on enhancing some of our tax exempt bonds by adding a Letter of Credit. We are getting close to having documents we would like to forward on to you. I wanted to find out from you what documents you will need. We are anticipating closing this transaction on September 15th.

These are the documents I think you might want:
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Official Statement
Remarketing Agreement (?)

The bonds we are working on are Coconino County, Arizona Pollution Control Corporation Pollution Control Revenue Refunding Bonds (Arizona Public Service Company) 1996A and 1999 Series.

Please let me know what else you might need from us. Thank you for your help.

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
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Phone: 602-250-5630

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McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Friday, August 07, 2009 7:42 AM
To: 'trudy.zibit@fitchratings.com'
Cc: McGill, James T(Z71171)
Subject: RE: Arizona Public Service Company

Thank you Trudy - we will get documents to you as soon as possible.

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

-----Original Message-----

From: trudy.zibit@fitchratings.com [mailto:trudy.zibit@fitchratings.com]
Sent: Friday, August 07, 2009 7:41 AM
To: Dolyniuk, Karen E(J97440)
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Hi Karen,

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Trudy

Trudy Zibit
Managing Director
Municipal Structured Finance,
Public Finance
One State Street Plaza
T 212 908-0689 / 800 75 FITCH
F 212 612-7797
E trudy.zibit@fitchratings.com

Karen.Dolyniuk@pinnaclewest.com

08/06/2009 06:01 PM

trudy.zibit@fitchratings.com To
James.MCGill@pinnaclewest.com cc
Arizona Public Service Company Subject

Trudy, your name was given to me by Phil Smyth. We are working on enhancing some of our tax exempt bonds by adding a Letter of Credit. We are getting close to having documents

we would like to forward on to you.

I wanted to find out from you what documents you will need. We are anticipating closing this transaction on September 15th.

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Please let me know what else you might need from us. Thank you for your help.

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

Email Firewall made the following annotations

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McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Monday, August 10, 2009 2:23 PM
To: 'trudy.zibit@fitchratings.com'
Cc: McGill, James T(Z71171)
Subject: RE: Arizona Public Service Company

Trudy, I have some good news! I mistakenly included Fitch in my calls to our three rating agencies, however, our agreement does not call for Fitch ratings, so we won't need you to take the time to review our documents.

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Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

-----Original Message-----

From: trudy.zibit@fitchratings.com [mailto:trudy.zibit@fitchratings.com]
Sent: Friday, August 07, 2009 7:41 AM
To: Dolyniuk, Karen E(J97440)
Cc: McGill, James T(Z71171)
Subject: Re: Arizona Public Service Company

Hi Karen,

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Trudy

Trudy Zibit
Managing Director
Municipal Structured Finance,
Public Finance
One State Street Plaza
T 212 908-0689 / 800 75 FITCH
F 212 612-7797
E trudy.zibit@fitchratings.com

Karen.Dolyniuk@pinnaclewest.com

08/06/2009 06:01 PM

trudy.zibit@fitchratings.com To
James.MCGill@pinnaclewest.com cc
Subject
Arizona Public Service Company

Trudy, your name was given to me by Phil Smyth. We are working on enhancing some of our tax exempt bonds by adding a Letter of Credit. We are getting close to having documents we would like to forward on to you. I wanted to find out from you what documents you will need. We are anticipating closing this transaction on September 15th.

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McGill, James T(Z71171)

From: trudy.zibit@fitchratings.com
Sent: Tuesday, August 11, 2009 6:29 AM
To: Dolyniuk, Karen E(J97440)
Cc: McGill, James T(Z71171)
Subject: RE: Arizona Public Service Company

Thanks Karen for letting me know. It was nice talking with you too.
Please do let us know if we can be of help another time.
Trudy

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E trudy.zibit@fitchratings.com

<Karen.Dolyniuk@pinnaclewest.com>

08/10/2009 05:23 PM

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E trudy.zibit@fitchratings.com

Karen.Dolyniuk@pin
naclewest.com

08/06/2009 06:01
PM

trudy.zibit@fitchratings.com To
James.MCGill@pinaclewest.com cc
Subject
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From: Dolyniuk, Karen E(J97440)
Sent: Tuesday, August 11, 2009 8:31 AM
To: 'trudy.zibit@fitchratings.com'
Cc: McGill, James T(Z71171)
Subject: RE: Arizona Public Service Company

Thank you!

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
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Phone: 602-250-5630

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McGill, James T(Z71171)

From: McGill, James T(Z71171)
Sent: Tuesday, August 11, 2009 12:46 PM
To: Laura Schumacher (laura.schumacher@moodys.com)
Subject: Report dtd 7/24/09

Laura,
Could I please get a copy of the Industry Outlook report Moody's published on 7/24. Thanks.

Jim

McGill, James T(Z71171)

From: Moss, Mitchell [Mitchell.Moss@moodys.com]
Sent: Wednesday, August 12, 2009 8:31 AM
To: McGill, James T(Z71171)
Subject: Moody's Utility Outlook report
Attachments: Moodys Utility Outlook 7-2009.pdf

Jim

Laura asked me to send you the Industry Outlook we recently published. See attached. Let us know if you need anything else.

Mitchell

<<Moodys Utility Outlook 7-2009.pdf>>

Mitchell Moss, CFA
Moody's Investors Service
7 World Trade Center, At 250 Greenwich Street
New York, NY 10007
212-553-4478, 212-298-6478 fax
mitchell.moss@moodys.com

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Industry Outlook

Moody's Global Infrastructure

July 2009

U.S. Regulated Electric Utilities

Six-Month Update

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Analyst Contacts:

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 Jim Hempstead 1.212.553.4318
Senior Vice President

W. Larry Hess 1.212.553.3837
Team Managing Director

(Analyst contacts continued on page 21)

The outlook for the U.S. investor-owned electric utility sector is stable. This outlook expresses Moody's expectations for the fundamental credit conditions in the industry over the next 12 to 18 months.

- Sector well-positioned within investment-grade range, with continued strong access to capital, protection from widespread economic turmoil and regulators still granting timely cost recovery
- Longer-term pressures on sector serve to raise over-all operating risks
- Modest declines in financial profile over past few years not alarming at this time but few issuers appear to be taking material steps to mitigate
- Utilities gradually expected to adjust "tone at the top" management strategies with balance-sheet strengthening and more conservative corporate finance philosophies

Key challenges include:

- Growing consumer intolerance for steadily increasing rates
- Exposure to increasingly stringent environmental regulations, including those related to carbon dioxide and mercury
- Wave of credit facility expirations in 2011-2012
- Protracted recessionary conditions adding to business and operating risks, raising some doubts over availability of credit and ongoing regulatory recovery



Moody's Investors Service

U.S. Regulated Electric Utilities

Overview

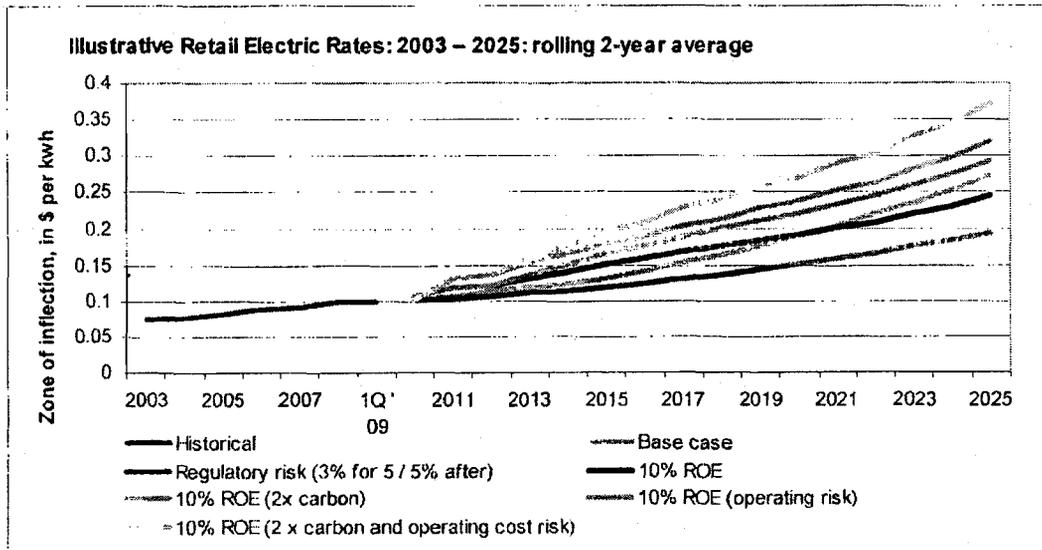
All the evidence we have seen suggests that the fundamental credit outlook for the electric utility sector will remain stable over the next 12-18 months. While most industrial sectors have negative sector outlooks today, we continue to view regulated utilities as relatively well insulated—although not immune—from economic and financial market turmoil. Regulation provides a key material benefit to the sector's overall credit profile, and we believe regulators will provide timely recovery of prudently incurred costs and investments over the near term. We have long held that regulators would rather regulate financially healthy companies than imperiled ones, and that utilities maintain effective constituency outreach efforts.

For the longer term, however, we are becoming increasingly concerned about possible changes to our fundamental assumptions about regulatory risk, particularly the prospect of a more adversarial political (and therefore regulatory) environment. A prolonged recessionary climate with high unemployment, or an intense period of inflation, could make cost recovery more uncertain. This could easily spark a negative vicious cycle.

We first highlighted these regulatory concerns in the 2004-2005 timeframe, as the sector's "back to basics" period came to an end and we questioned whether the (then-recent) improvement in financial metrics had reached its peak. Today, we have an eye on the theoretical "inflection point" beyond which consumers will no longer tolerate annual rate increases without protest. We do not know where this inflection point lies, but we believe it exists somewhere near the point at which consumers begin to change their behavior—as when gasoline reached \$4 per gallon last year—and begin to contact their elected officials with vocal protests. But because consumers cannot easily alter their electricity consumption, the inflection point could actually spark a major political reaction. We believe this reaction could develop suddenly, and probably not at a welcome time. Should this happen, it is unclear how regulators would react and how the sector would fare.

The average annual electric bill costs the typical U.S. household about 3.4% of its disposable income. We estimate that the inflection point might be crossed once an annual electric bill reaches roughly 5%-10% of a given household's disposable income—and that this could happen within the next decade, judging from our base-case projections. In various downside scenarios, the inflection point could accelerate by several years, to 2013-2015—well within our typical ratings horizon.

It appears that many of the chief executives and regulators with whom we speak regularly have either not yet arrived at a consensus view of exactly where this inflection point lies, or are uncertain how close we are to approaching this point. This uncertainty is truly surprising, in our opinion, given the magnitude of the potential risk to both a utility's credit profile and its shareholder's equity.



U.S. Regulated Electric Utilities

Utilities remain well positioned within rating category

Of all the factors affecting U.S. electric utility ratings, we have long considered regulatory support perhaps the most critical driver. We continue to believe regulators prefer to oversee financially healthy utilities, and certainly for the near term, we believe the sector will continue to enjoy reasonably good regulatory support. Our focus remains fixed on cash flow, not on authorized returns on equity (ROEs). We also remain more interested in written regulatory orders—not initial indications from utilities, regulatory staff, intervenors, or administrative law judges (although they may offer some hint about the likely rulings).

We believe today's utilities generally act as solid corporate citizens within their respective service territories. Most utilities practice reasonably effective constituency outreach programs: they are large employers; provide socialized relief for special customer classes; serve as effective tax-collecting (and taxpaying) agencies for state and local governments; and usually support parochial philanthropic endeavors. For these reasons, utilities tend to get the political support they need, when they need it—ultimately a credit positive.

Regulatory oversight is crucial for sector

We consider most utility issuers reasonably well-positioned within their respective ratings categories. Four principal sub-sectors comprise our utility universe: parent utility holding companies; vertically integrated utilities; transmission and distribution-only utilities (T&Ds); and natural gas local distribution companies (LDCs). For a list of the issuers that comprise these sub-sectors, see Appendix B, page 15.

We place the operating utility sectors, which include the vertically integrated electric, T&D and LDC utilities in the A3 / Baa1 ratings category range. The utility parent holding companies tend to be rated about one notch lower, in the Baa1 / Baa2 range.

In general, we incorporate a view the regulatory framework across the U.S. represents a material credit positive, but is less favorable than the regulatory frameworks in Europe or Asia. This is primarily due to the highly fragmented and parochial effects of state-by-state regulatory policies. We note that the business activities that are primarily regulated by the Federal Energy Regulatory Commission (FERC) typically receive a more favorable view. Our regulatory views are usually slightly less favorable when evaluating the utility parent holding companies, largely reflecting non-regulated business activities, which typically comprise roughly 15%-25% of consolidated operations.

The operating utility sub-sectors are also well positioned in terms of rates and cost recovery, where the vast majority of costs and investments are recovered in a reasonably timely basis. Of course, regulatory lag on various issues will remain a factor. As a result, we generally incorporate a view that utilities derive a benefit from diversification across state lines, broadening the risk of regulatory jurisdictions and implied recovery lag.

We tend to view the rates and recovery mechanisms for the vertically integrated utilities as slightly less favorable than the T&D and LDC peers, primarily because of the greater uncertainties related to fuel commodities and increasingly stringent environmental mandates such as carbon regulations.

Finally, we consider the sector's overall liquidity adequate, although this assumes that utilities will continue to enjoy unfettered access to the capital markets. Little evidence to date suggests we should change our views regarding access to the capital markets. Nevertheless, our assumption represents a major component to our liquidity assessments, and ultimately ratings, so unexpected challenges to access could result in a materially adverse ratings consequence across the entire sector.

Utilities, in general, have proven capable of issuing senior secured debt in times of crisis—debt that has performed extremely well historically in terms of expected loss and recovery values.¹ During the most recent financial turmoil, most utilities had little trouble accessing capital across the entire capital structure. Yet we are often reminded that the past is not a reliable indicator of future performance. While challenged market access

¹ See Special Comment, "Proposed Wider Notching Between Certain Senior Secured Debt Ratings and Senior Unsecured Debt Ratings for Investment Grade Regulated Utilities," May 2009.

U.S. Regulated Electric Utilities

strikes us as unlikely, its effects could be substantial, not unlike the "tail risk" often discussed in hedging strategies, and possibly resulting in multiple notch rating changes over a very short period of time.

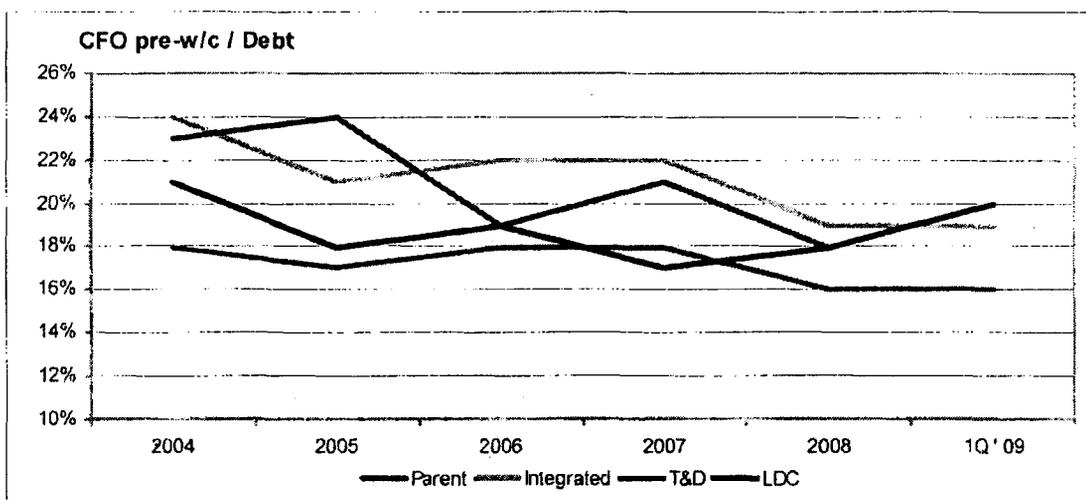
Over the past three years, the principal sub-sectors have produced relatively stable, if modestly deteriorating, key financial credit ratios.

Selected historical credit metrics

	CFO / Debt	CFO / Interest	CFO / Debt	CFO / Interest	CFO / Debt	CFO / Interest	CFO / Debt	CFO / Interest
	5-yr	5-yr	3-yr	3-yr	2008	2008	LTM 1Q 2009	LTM 1Q 2009
Parent	17%	3.9	17%	3.9	16%	3.7	16%	3.7
Integrated	21%	4.7	21%	4.6	19%	4.4	19%	4.2
T&D	21%	4.6	19%	4.2	18%	4.0	20%	4.7
LDC	19%	4.5	18%	4.3	18%	4.5	20%	4.3

CFO / Debt = cash flow from operations before changes in working capital / total adjusted debt outstanding

While a modest decline in the financial ratios is not alarming today, the breadth of the decline across sub-factors is noticeable (with the exception of LDCs) when comparing the more recent results with the historical averages. We noted the possibility of this deterioration several years ago, when we questioned whether the industry's "back-to-basics" strategy was being retired prematurely, or at least before the originally articulated balance sheet goals were reached.



Regulation provides multiple notches of ratings benefit

About 50% of the utility sector's rating stems directly from its status as a regulated monopoly that provides an essential service to the general population. To gauge regulation's influence on the utility sector's ratings, we evaluated selected financial credit metrics, using the 3-year average financials (2006-2008) for the utility sector, and ran them through the rating methodologies for a selected group of large, capital-intensive, commodity-exposed industrial peers. Although many of these industrial sectors are also affected by various forms of regulation, regulation over profitability is less evident than the utility sector.²

² These industries may be affected by regulation, but our key interest for the electric utilities is the cost-recovery mechanism, which these other sectors lack.

U.S. Regulated Electric Utilities

Clearly, based only on the financial metrics, the utility sector would be, at best, a borderline investment-grade sector, if not for the regulatory support. The utility parent holding companies would more clearly appear in the non-investment-grade range. This is primarily a result of the industrial peers being required to maintain RCF/debt ratios of roughly 30% to be considered investment-grade, while utility-sector issuers need only maintain ratios above roughly 10%.

We conducted a second exercise, evaluating the selected industrial peer financials within our general utility rating methodology framework. Again, we only examined the three-year historical average financial ratios and excluded all other industry-specific rating factors. As the next table shows, the industrial peers appear to be strongly investment-grade when compared to the lower financial metric thresholds held out for utilities on a cash flow measure, but less so when evaluated on a capitalization perspective.

Sectors *	Implied utility ratings based on selected industrial rating methodologies								Selected industrial ratings based on Utility rating methodology	
	Parent utility companies				Integrated utilities				RCF/Debt	Debt/Capz.
	RCF/Debt	Debt/Capz.	Debt/EBITDA	FCF/Debt	RCF/Debt	Debt/Capz.	Debt/EBITDA	FCF/Debt		
Airlines	--	Ba	Ba	Caa	--	Baa	Ba	Caa	Baa	Caa
Capital Goods	Ba	A	Ba	Caa	Ba	A	Baa	Caa	Aaa	Baa
Chemicals	--	Ba	Ba	Caa	--	Baa	Ba	Caa	Aa	Ba
Coal	Ba	Ba	Ba	Caa	Ba	Baa	Baa	Caa	Aaa	Baa
Oil & Gas integrated	Ba	Ba	--	--	Ba	Baa	--	--	Aaa	Aa
Packaging	--	--	Ba	Ca	--	--	Ba	Ca	A	B
Paper & Forest Prod.	Ba	--	Ba	Caa	Ba	--	Ba	Caa	Baa	Ba
Pharmaceutical	Ba	Ba	--	Caa	Ba	Ba	--	Caa	Aa	Baa
Shipping	B	--	Ba	B	Ba	--	Baa	B	Baa	Ba
Steel	--	Ba	Ba	Caa	--	Baa	Baa	Caa	Aaa	A

* Most of these selected groups of comparable industrial peers include 8-12 companies.

Because the regulatory benefit is so critical to our ratings, it tends to represent the most important risk factor. While we continue to consider regulatory risk a lower risk today, we believe there are potential longer-term regulatory risks that could emerge on two fronts:

- Regulatory support for timely recovery could erode; and
- Regulators could reduce the authorized returns on investments, based on the perception that utilities have lower business risks than other industrial sectors and will find it easier to compete for capital.

Theoretically, regulators could attack the standard cost of capital arguments that assert competitive ROEs and other returns are necessary to attract capital. Our concern is that regulators could attempt to modify their views on the appropriate returns, since the sector's leverage is already benefited by regulation.

What could change the sector outlook to negative?

The electric utility industry appears reasonably well-positioned today within its investment-grade rating category, despite increasing business challenges. Modestly declining financial metrics—a fundamental credit negative—could eventually force us into a more negative position for the sector. For now, though, we continue to incorporate a view that regulators will ultimately provide timely financial relief.

A shift to a negative outlook could emerge based on our view that few utility management teams are taking meaningful steps to strengthen their balance sheets and therefore may not be sufficiently positioned to withstand unexpected shocks or challenges to the longer-term fundamental business plan, for its given rating category.

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Nevertheless, most utility executives agree with our general view of the pending risks and challenges. They also believe they have enough time to assess the situation and gain better clarity about the facts. Our concern is if one or more challenges appear unannounced, at exactly the worst possible time. Since there is general agreement that these risks are legitimate, we conclude that conservative utility management teams would otherwise take precautionary measures to protect their franchise.

Beyond a widespread management failure to actively strengthen their balance sheets, the outlook for this sector could turn negative with a material change in the regulatory environment, which today tends to support the utilities' recovery of reasonable costs from ratepayers. We foresee no significant changes in this regulatory support at this time but will be carefully evaluating many of the rate case proceedings currently underway, including those in Texas, Florida, Virginia, New York and South Carolina.

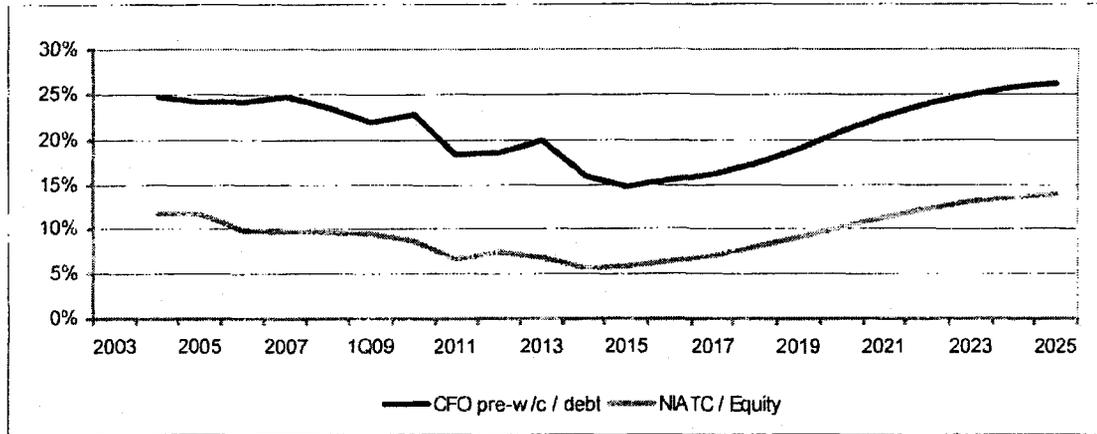
Base-case financial projections for vertically integrated utilities

We evaluated historical financial statements for about 75 vertically integrated electric utilities, creating a hypothetical utility to illustrate financial projections over the next 20 years. Some of our assumptions:

- All revenues come from sales of electricity.
- Volumes rise modestly over the next few years before reversing and remaining flat (0% growth) by the late 2010s. We believe these volume assumptions reflect a modest economic recovery over the next few years followed by flat volume growth associated with energy efficiency programs.
- Total authorized rate increases of 5% per year between 2010-2014, followed by 7.5% rate increases every year thereafter.
- Fuel and purchase power expenses alternating between 50% and 55% of total revenue every year, reflecting the volatility of fuel commodities. This creates some "choppiness" in our financial returns, so we illustrate the results of our models with rolling two-year averages.
- Carbon costs begin in 2014 at \$5 per ton, increasing to \$10 per ton in 2015 and by an additional \$2.50 per ton annually thereafter.
- Energy efficiency costs, renewable energy costs, and other incremental costs total roughly 3% of revenues for the next three years, and 5% of revenues thereafter. We assume all "tracker" mechanisms are incorporated into this assumption. Any automatic recovery is assumed to be captured in the annual rate increase assumption noted previously.
- Operating and maintenance costs grow by 2% every year.
- Annual projected capital expenditures are based on the previous year's depreciation and amortization. Capital expenditures will amount to 250% of the previous year's D&A in 2010-2011, gradually scaling down to 125% by 2019 before rising again, to 275% by 2025. These capital expenditure trends reflect the sector's need for infrastructure investment—and herd cyclicality.
- We adjust the dividend-payout ratio and the amount of new debt financing (assuming a 6% coupon on all incremental new debt) to maintain a general debt-to-capitalization ratio of about 50%.

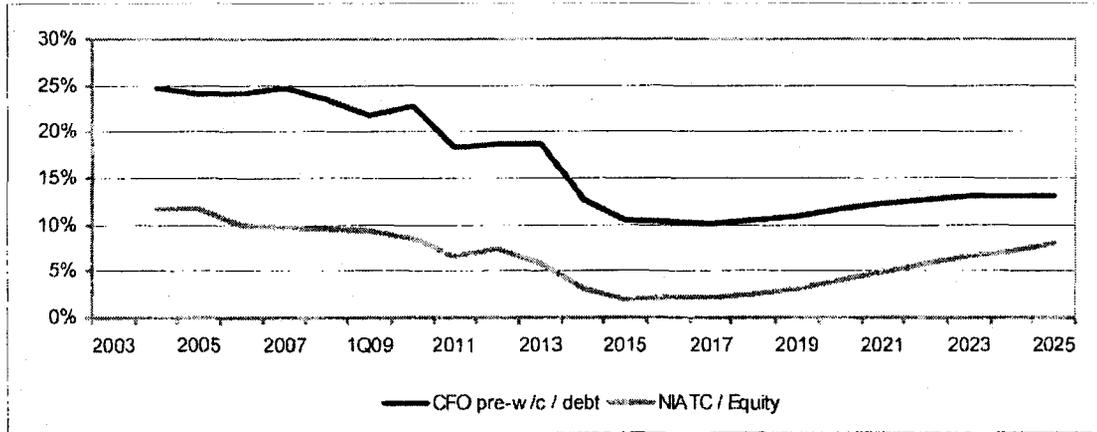
As a result of these base case assumptions, our hypothetical utility would generate CFO pre-w/c to debt and ROE over the next two decades as illustrated in the next graph:

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Even allowing for some volatility in the financial ratios, this hypothetical utility would most likely be positioned for ratings upgrades. This could be based on the continued regulatory support and steadily improving CFO/debt ratios, possibly in the 2014-2015 timeframe, when the visibility over carbon-cost implications is clearer, and the majority of the bank credit facilities have already rolled.

If, however, our base-case assumptions included a more costly carbon impact—for example, doubling our per-ton cost estimates to \$10/ton in 2014 and \$20/ton in 2015, and increasing by \$5/ton every year thereafter—our hypothetical company's results would look less robust. This utility is likely to suffer modest rating downgrades, possibly around 2011-2013, as CFO / debt ratios approach the 10% threshold before showing signs of improvement in 2014-2015.

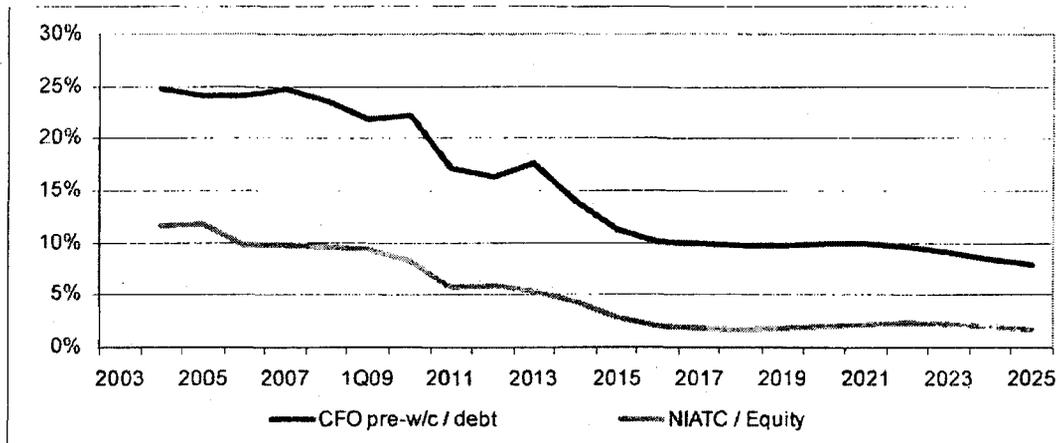


Carbon obviously represents a significant potential risk to this sector's long-term credit profile. Although we do not consider ROE a primary credit driver, we would be concerned if it fell significantly below the 9%-10% range over a sustained period: the lower the ROE, the greater uncertainty over the sector's capital allocation and stewardship by management teams and boards of directors. Presumably, management could look for better uses for their capital.

The current economic climate could make it impossible for our hypothetical utility regulators to authorize annual rate increases of 5%-7.5%, which is incorporated into our illustration. If today's severe economic conditions persist—as we believe they may into 2010, if not beyond—rate increases could eventually spark a backlash by both ratepayers and regulators.

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If rate increases were limited to only 3% a year over the next five years, followed by 5% annual increases thereafter (versus 5% annual increases over the next five years and 7.5% annually thereafter), there could be a material amount of pressure on both the credit, as well as the equity, all other assumptions held constant.



Three primary challenges

The utility sector faces three major threats that would increase its overall business and operating risk profile. For the most part, these risks are not new to the sector, but are arguably downplayed or dismissed. Utilities have not yet reached a crisis point, but we think these challenges may combine and emerge together in the 2011-2013 timeframe, as the majority of the credit facilities expire and the incremental operating costs associated with carbon begin to appear. As a result, we believe the most effective course of action to protect existing ratings (and equity values) is to take active evasive measures and strengthen the balance sheet and bolster liquidity reserves. This will not be easy.

As noted previously, the biggest challenge is maintaining a supportive regulatory relationship. One component of this regulatory risk includes increasingly stringent environmental mandates for carbon and mercury. The likely passage of some federal law regulating carbon dioxide emissions—possibly as soon as this year or next³—could be a fundamental sector-changing event, with unknown effects on balance sheets and liquidity. Such uncertainties increasingly represent a primary consideration for credit ratings. We are struck by the industry's apparent lack of urgency regarding new, complex and potentially costly carbon rules. Moreover, we expect incrementally strict environmental mandates over the near to intermediate term concerning mercury, NOX, and SOX, among other pollutants. Again, though, few utilities appear visibly concerned.

A second big risk stems from the sector's heavy reliance on unfettered access to the capital markets as a component of its liquidity. The capital markets have accepted this reliance over many decades, and many utility issuers have been all but untouched by the recent and ongoing turmoil in the financial markets. Even so, the reliance on third-party financing remains a critical risk factor—especially as numerous bank credit facilities expire over 2011-2012. The increasing burden on our overall liquidity analysis may eventually stop us from assuming the sector has unfettered access to the capital markets. The dramatic changes in credit availability and the financial institutions require some caution. We believe utilities will see their available borrowing capacity decrease, possibly by as much as 25%-30%; that tenors will shorten, with two-year facilities more widespread than five-year; and that pricing will be substantially higher than today.

Finally, we are not sure today's level of authorized cost relief will continue. Utilities are among the most capital-intensive of all industrial sectors, with aging infrastructures that require constant maintenance and long-term capital investment. In addition, public policy agendas are influencing utilities' operating cost structure, which will contribute to increasing rate pressure. Utilities will find it increasingly difficult to balance a need for higher

³ Most industry participants predict that new environmental mandates will take effect around 2012-2013.

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rates with the ability to post returns that attract new capital investment. At some point, ratepayers and regulators may begin to resist these higher rates.

Consumers have limited ability to absorb new rate increases

All of these pressures indicate that there is pressure for higher electric rates, and we believe consumers and ratepayers may eventually complain to their elected officials. Once this inflection point is breached, the political and regulatory reaction will represent a major, fundamental and highly uncertain risk for the sector.

Regulators might find it increasingly difficult to authorize steadily increasing rates, especially in today's uncertain economic climate. No one knows how big an increase consumers can absorb; in any case the size would vary by location.

Even so, gasoline prices offer a look at how consumers react once this inflection point is reached, when \$4-a-gallon gasoline in 2008 led to a distinct shift in behavior among U.S. motorists. That shift still persists a year later, even with gasoline prices much lower nationwide.

Although we acknowledge that electricity volumes are more inelastic than gasoline, we attempt to illustrate the possible U.S. consumer inflection point regarding electric rates. Our illustration begins with average household income in 2007. We subtract about 30% to reflect state and federal taxes and other primary deductions. The result is average disposable household income. We then compare the average annual utility bill to the average disposable household income, and arrive at the average electric bill as a percentage of disposable household income. As of 2007, this ratio was about 3.4%.

While no one claims to know exactly at what point consumers will begin to object to higher electric rates, we believe this inflection point is crossed roughly when the electric bill reaches 5%-10% of disposable income. This would imply annual electric bills of about \$3,500-\$1,800 from the current \$1,200, and total aggregate rate increases of roughly 100%-50% over the existing national average of 10.65 cents per kwh.

Sharply higher utility bills and lackluster income growth: A politically volatile mix

If U.S. household outlays for electric and gas bills advance by 20% annually between 2010-2012, they would represent a record 4% of disposable personal income (DPI) by the end of that period. Aggregate outlays on electric and gas rose by 21.3% annualized on average during the three years that ended in the first quarter of 1977, while spending on electric and gas rose no higher than 2.8% of DPI—mostly because DPI grew by a comparatively rapid annual 9.9% on average.

By contrast, U.S. consumers would be enraged if their overall electric and gas bills soared more than 20% annualized during the 2010-2012 period if DPI rose by a much slower 1.8% annually, on average. DPI growth could indeed be this low, based on expectations of a soft U.S. labor market subject to competitive pressures from workforces in China and India—a marked contrast from 1977, when American workers were not yet subject to wage pressures from competitively priced labor in the emerging markets.

Consumer spending on gasoline and fuel oil soared by 26% during the 12 months that ended September 2008. These prices became a political issue, even though DPI rose at a relatively normal 5.3% during this period. Any sharp acceleration of energy costs amid decidedly weak income growth is likely to spark political discord.

Sources: John Lonski, Managing Director, Moody's Capital Markets Research Group; National Income Product Accounts (NIPA)

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Carbon dioxide regulations represent huge risk

Six months into the Obama administration, legislation concerning federally mandated carbon dioxide regulations—the American Clean Energy and Security Act of 2009 (ACES), also known as the Waxman-Markey bill—has passed the House, and now resides with the Senate. The vast majority of our industry contacts—utility executives, regulators, legislators, bankers, consultants, and investors alike—feel that carbon-emission restrictions are now inevitable. Most expect the passage of some form of carbon-emission limits in 2009 or 2010, with actual implementation likely around 2012-2013.

But few market participants claim to understand the intricacies of the current version of the bill, and in any case, details will continue to change as the bill goes through the Senate (and eventually the House-Senate reconciliation process, if it passes). But we note that any version of ACES that becomes law could place a steep cost-burden on the electric utility industry, which relies heavily on emission-producing coal and natural gas.

The current legislation aims to achieve a 17% reduction in carbon emissions by 2020 from 2005 levels, and an 83% reduction by 2050. Assuming the electric utility sector was responsible for about two-thirds of the 6 trillion metric tons of carbon produced in 2005, the sector would have to reduce its own carbon emissions by about 1 trillion metric tons by 2020.⁴ Estimates for the industry's carbon emission costs vary widely—from roughly the mid-single digits initially (\$5/ton) growing to anywhere from \$25/ton to \$100/ton by 2025. We anticipate that the costs will begin at about \$5/ton, increase rapidly to about \$10/ton, and then rise at a modest but steady annual \$2.50/ton.

We believe carbon-emission taxes could threaten some utilities' liquidity. For a simple utility that sells 20 Twh's of electricity, with 50% generated from coal and 25% from natural gas, the costs of carbon might range from \$60 million-\$300 million annually (assuming carbon taxes of \$5/ton-\$25/ton). Although we accept that most issuers would be able to recover their carbon costs from ratepayers, the timing related to any potential recovery remains unclear. This could put significant pressure on an issuer's liquidity position; in the current environment, this presents a material concern.

⁴ This assumes that the electric utility sector must reduce its own carbon emissions by the same amount as the overall mandate—i.e., by 17% by 2020).

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	Millions of Metric Tons	
	Total Sources	Energy Related
2005 CO2 emissions	6,032	5,975
Percentage derived by utilities	67%	67%
Implied utility CO2 emissions	4,011	3,974
Estimated total MW capacity (US)		950,000
Assumed % coal		50%
Assumed % natural gas		20%
Implied MW's by fuel source		
Coal		475,000
Natural gas		190,000
		<u>665,000</u>
Assumed capacity factors		
Coal		70%
Natural gas		25%
Implied generation (MWh's)		
Coal		2,912.7
Natural gas		416.1
		<u>3,328.8</u>
Implied CO2 emissions		
Coal (1 MWH = 1 ton)		2,912.7
Natural gas (1 MWH = 0.5 tons)		208.1
		<u>3,120.8</u>

From a credit perspective, we believe the carbon-emission legislation poses a major risk for the sector, primarily because of its complexity and apparent implications to liquidity. The legislation may become less imposing for the utility sector as it makes its way through the U.S. Senate, in part based on the sector's effective lobbying efforts. But the bill's complexity creates an expectation that a utility's financial statements could become less transparent with respect to these costs and their overall financial implications—a credit negative.

Liquidity harder to manage amid tighter credit markets

About 10% of the sector's \$110 billion of credit facilities are expected to expire around October 2009, with another 10% expiring in April 2010. The remainder is due to expire in 2011 and 2012.

We believe the turmoil impacting the financial institutions will remove about 30% of the utility industry's current available credit which will drop overall liquidity capacity to roughly \$77 billion from about \$110 billion—a drop of about \$30 billion. That is a lot of credit capacity coming out of the system.

The maturities of these credit facilities are most likely to be in the 1-2 year tenor. More restrictive covenant packages, and possibly even material adverse-change clauses, may become more standard.

U.S. Regulated Electric Utilities

The capacity reduction results in a roughly \$33 billion of liquidity sources removed from the system. Several utilities—including DTE Energy, FPL Group, NICOR, Southern and TECO Energy—have been reasonably successful in rolling over near-term credit facilities. Liquidity appears more challenged for others, such as AEP and Duke Energy. Ultimately, we believe the issue is one of pricing, not capacity availability.

No one knows how much carbon costs will impact working capital, and therefore liquidity. We would be concerned if more stringent borrowing restrictions and financial covenant requirements conspire to challenge the sector's ability to borrow on its facilities.

Two key issues sum up the unknowable effect of these potential emissions costs: How utilities will plan their long-term investments in this environment, and what their projected financial statements show.

Pension obligations weigh further on debts

In our last industry outlook we reviewed the 2007 funded status of pensions for several utilities. Based on these numbers we estimated that the utility sector might have exposure of upwards of \$40 billion in under-funded pensions at the end of 2008. The actual pension disclosures indicated a modestly lower exposure, at \$33 billion or a 73% funded status. While this funded status is better than we estimated it is by no means reason to celebrate.

From a credit perspective, Moody's treats under-funded pension obligations as a debt equivalent. As such \$33 billion of additional debt equivalents clearly adds downward pressure to the credit ratings of some utilities. However, large pension under-funding in isolation did not lead to a broad wave of rating downgrades but were a factor in some downgrades, and will likely be a factor in future rating actions.

An important determinant in the rating impact on affected issuers is the magnitude of cash required to meet increased funding obligations relative to the company's liquid resources.⁵ Pension funding requirements are governed by the Pension Protection Act of 2006 (PPA), which became effective in 2008. A required contribution must be paid within 8.5 months of the close of the plan year. As plan years begin one day after the fiscal year closes this would mean that a company with a December 31, 2008 year end may have until September 15, 2010 to make its contribution. However, companies' plans which were under-funded in the prior year compared to the PPA transition thresholds must make quarterly contributions in the current year.

While the PPA is very strict in many regards, there is some flexibility regarding required quarterly contributions. If a plan sponsor previously made voluntary contributions, which are referred to as prior year credits, it may be able to defer some or all of the required quarterly payments until the next year. Specifically if the plan is at least 80% funded in the current plan year it may be able utilize its prior year credits to defer payments. What these provisions effectively mean is that many plans which were in decent shape at the end of 2007 could push 2009 contributions off until 2010. If funding levels do not increase by the end of 2008, a utility might be required to make two years of contributions in 2010. Several may be positioned to push contributions off until 2011, but eventually the contributions will be made. We observe that many utilities are using prior year credits to delay funding requirements until 2010.

As the year draws to a close and we get some insight into probable 2009 funding levels we will take a very close look at potential liquidity issues due to large pension contributions in 2010 and 2011. This potential use of liquidity could become more of a concern depending on the state of the credit markets at this time, and the success utilities have in managing their liquidity sources.

Capital planning for future uncertainties

The electric utility sector depends on long-lived physical assets and long-term planning—both of which pose challenges for companies' business and operating risk profiles. Changes to federal and state policies over base-load requirements and emission regulations can wreak havoc on utility managers' ability to plan and invest.

⁵ See Special Comment, "Managing Ratings With Increased Pension Liability," March 2009.

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Moreover, the apparent solutions to several of the sector's challenges—renewables, smart grids, efficiency measures—may raise near-term costs for consumers. In essence, it is easier to maintain the status quo (and continue polluting with carbon-based fuels) than to change consumer behaviors. The up-front costs have to be authorized for recovery and amortized over a longer-term period of time, thus creating challenges for consumer acceptance. Of course, it is difficult to estimate the unintended consequences associated with burning those carbon-based fuels.

Nevertheless, we know consumer behaviors can change quickly, as the makers of horse-drawn carriages, typewriters, videocassettes, or even SUVs can attest. Although consumers may be slow to risk their own personal comfort by changing their use of an essential service like electric power, few analysts think the electric utility sector is immune to the risks of changing technology.

Federal initiatives associated with renewable energy standards also cause us some concern. We believe a material increase in renewable energy sources can create challenges with transmission grid operators, primarily because they cannot be scheduled. The greater the percentage of renewable resources used to generate power, the likelier we are to see "problems" for grid operators—and thus higher costs for ratepayers.

Conclusion

Historically, we have held that utilities manage their financial positions in a relatively conservative manner—that safe and reliable service is fundamental to their business plans and that they need healthy, regular infusions of debt and equity to fund their sizeable negative free cash flows.

Most of our issuers expect Washington to impose some form of carbon tax over the near- to intermediate term. Whether enacted this year or next, few believe it will disappear. But we believe utilities tend to downplay the magnitude of the potential risks from such legislation, with managements continuing to assume they will see the appropriate regulatory relief to cover their costs. Today, we continue to believe that prudently incurred costs and investments will be recovered, but we do not consider future cost-recovery a given. The uncertain economic climate clouds our visibility regarding these assumptions.

The sector needs significant capital to refurbish its infrastructure, implying sizeable negative free cash flows that must be financed in the capital markets. But credit availability is now tighter and costlier than even a year ago, and may remain this way indefinitely. Today we believe the sector will maintain unfettered access to the capital markets, and that expiring credit facilities will be rolled over into new facilities without a material reduction in capacity.

Regulators continue to scrutinize authorized ROEs, and intervenors increasingly feel that trackers and other recovery mechanisms can lower a utility's business risk profile. We expect to see growing tension between utilities—which need financial relief for increasing costs and investment—and consumers, whose tolerance for higher rates may be tested further in a poor economic environment.

Since few, if any, industry participants disagree with the risks identified in this report, we are somewhat baffled that utility management teams seem reluctant to proactively strengthen their balance sheets in the face of such challenges. In essence, we are talking about protecting the ultimate franchise of the utility's service territory and their ability to assure a safe and reliable essential service.

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Appendix A: Macroeconomic Risk Scenarios

Our central outlook for the global economy has worsened since late last year, now taking the shape of a hook when plotted on a graph, as opposed to a "U."

This means we expect that the global recession this year will be deeper than we thought six months ago and that it will be followed by a slow and painful recovery for most economies in 2010, not a steep rebound, as previously thought.

We also can't rule out the risk that the global economy will follow a darker path, the downside scenario described below. The central and downside scenarios both begin with a severe downturn. It is the shape of the recovery that distinguishes them.

Central scenario (hook-shaped recovery): The prospect for a robust recovery is bleak, taking the shape of a hook. The U.S. economy could shrink between 2% and 3% in 2009, before expanding 1% to 2% in 2010—meaning that once the recovery takes shape, growth will be tepid at best.

Implications for the industry: Our stable outlook on the U.S. regulated utilities industry incorporates this view.

Downside scenario (L-shaped recovery): A recovery in 2010, if one emerges, takes the shape of an "L"—signifying years of little or no economic growth for most major economies.

There is a real risk of this happening. But it is too early to adopt this scenario as our base case because it is too early to tell whether fiscal and monetary stimulus policies are working. Some signs should emerge this summer. Odds are the fiscal packages will limit the damage.

Implications for the industry: Worsening U.S. unemployment adds to pressures on consumers, and commodity prices begin to rise, increasing bills for ratepayers. The hardship that some consumers face in paying their monthly bills creates political pressure against utilities. Regulators begin to question more closely, and in some cases deny, the utilities' requests for cost recovery, putting pressure on the companies' revenues and cash flow. Access to capital deteriorates and liquidity becomes a concern.

For the full report, published by the economists at Moody's Global Financial Risk Unit on May 6, 2009, please click here.

U.S. Regulated Electric Utilities

Appendix B: Peer index composition

PORTFOLIO: Parents

Vertically Integrated Utilities

T & D utilities

LDC utilities

Entity Name	Current LT Rating	Entity Name	Current LT Rating	Entity Name	Current LT Rating
AES Corporation, (The)	B1	Alabama Power Company	A2	AEP Texas Central Company	Baa2
Allgehey Energy, Inc.	Ba1	ALLETE, Inc.	Baa2	AEP Texas North Company	Baa2
Alliant Energy Corporation	Baa3	Appalachian Power Company	Baa2	AES El Salvador Trust	Ba2
Ameren Corporation	Baa3	Arizona Public Service Company	Baa2	American Transmission Company LLC *	A1
American Electric Power Company	Baa2	Avista Corp.	Baa3	Atlantic City Electric Company	Baa1
Black Hills Corporation	Baa3	Black Hills Power, Inc.	Baa2	Baltimore Gas and Electric Company	Baa2
CenterPoint Energy, Inc.	Ba1	Central Illinois Light Company	Ba1	CenterPoint Energy Houston Electric	Baa3
Cleco Corporation	Baa3	Central Vermont Public Service	Ba2	Central Hudson Gas & Electric	A2
CMS Energy Corporation	Ba1	Cleco Power LLC	Baa1	Central Illinois Public Service	Ba1
Consolidated Edison, Inc.	Ba1	Columbus Southern Power Company	A3	Central Maine Power Company	Baa1
Constellation Energy Group, Inc.	Baa3	Consumers Energy Company	Baa2	Cleveland Electric Illuminating	Baa3
Dominion Resources Inc.	Baa2	Dayton Power & Light Company	A2	Commonwealth Edison Company	Baa3
DPL Inc.	Ba1	Detroit Edison Company (The)	Baa1	Connecticut Light and Power	Baa1
DTE Energy Company	Baa2	Duke Energy Carolinas, LLC	A3	Consolidated Edison Company of NY	A3
Duke Energy Corporation	Baa2	Duke Energy Indiana, Inc.	Baa1	Delmarva Power & Light Company	Baa2
Duquesne Light Holdings, Inc.	Ba1	Duke Energy Kentucky, Inc.	Baa1	Duquesne Light Company	Baa2
Edison International	Baa2	Duke Energy Ohio, Inc.	Baa1	Empresa Electrica de Guatemala, S.A.	Ba3
Emera Inc.	Baa2	El Paso Electric Company	Baa2	FortisAlberta Inc.	Baa1
Energis S.A.	Baa3	Empire District Electric Company	Baa2	Georgia Transmission Corporation *	Baa1
Energy Corporation	Baa3	Energy Arkansas, Inc.	Baa2	Illinois Power Company	Ba1
Exelon Corporation	Baa1	Energy Gulf States Louisiana, LLC	Baa3	International Transmission Company *	A3
FirstEnergy Corp.	Baa3	Energy Louisiana, LLC	Baa2	ITC Midwest LLC *	A3
FPL Group, Inc.	A2	Energy Mississippi, Inc.	Baa3	Jersey Central Power & Light Company	Baa2
Great Plains Energy Incorporated	Baa3	Energy New Orleans, Inc.	Ba2	Massachusetts Electric Company	A3
IDACORP, Inc.	Baa2	Energy Texas, Inc.	Ba1	Metropolitan Edison Company	Baa2
Integrus Energy Group, Inc.	Ba1	Florida Power & Light Company	A1	Michigan Electric Transmission Company, LLC *	A3
MidAmerican Energy Holdings Co.	Ba1	FortisBC Inc	Baa2	Narragansett Electric Company	A3
NISource Inc.	Baa3	Georgia Power Company	A2	New England Power Company	A3
				Terasen Gas Inc.	A3
				Terasen Inc.	Baa2

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PORTFOLIO: Parents		Vertically Integrated Utilities		T & D Utilities		LDC Utilities	
Entity Name	Current LT Rating	Entity Name	Current LT Rating	Entity Name	Current LT Rating	Entity Name	Current LT Rating
Northeast Utilities	Baa2	Green Mountain Power Corporation	A3	New York State Electric and Gas	Baa2	UGI Utilities, Inc.	A3
NSTAR	A2	Gulf Power Company	A2	Newfoundland Power Inc.	Baa1	Washington Gas Light Company	A2
NV Energy Inc.	Ba1	Hawaiian Electric Company, Inc.	Baa1	Niagara Mohawk Power Corporation	A3	Wisconsin Gas LLC	A1
OGE Energy Corp.	Baa1	Idaho Power Company	Baa1	NSTAR Electric Company	A1	Yankee Gas Services Company	Baa2
Pepero Holdings, Inc.	Baa3	Indiana Michigan Power Company	Baa2	Ohio Edison Company	Baa2		
PG&E Corporation	Baa1	Indianapolis Power & Light Company	Baa2	Oncor Electric Delivery Company	Baa1		
Pinnacle West Capital Corporation	Baa3	Kansas City Power & Light Company	Baa1	Orange and Rockland Utilities, Inc.	Baa1		
PNM Resources, Inc.	Ba2	Kansas City Power & Light (MO)	Baa3	PECO Energy Company	A3		
PPL Corporation	Baa2	Kentucky Power Company	Baa2	Pennsylvania Electric Company	Baa2		
Progress Energy, Inc.	Baa2	Kentucky Utilities Co.	A2	Pennsylvania Power Co.	Baa2		
Public Service Enterprise Group	Baa2	Louisville Gas & Electric Company	A2	Potomac Edison Company (The)	Baa3		
Puget Energy, Inc.	Ba2	Madison Gas and Electric Company	Aa3	Potomac Electric Power Company	Baa2		
SCANA Corporation	Baa1	MDU Electric & Gas Utilities	Not Rated	PPL Electric Utilities Corporation	Baa1		
Sempra Energy	Baa1	MidAmerican Energy Company	A2	Public Service Electric and Gas Company	Baa1		
Southern Company (The)	A3	Mississippi Power Company	A1	Rochester Gas & Electric Corporation	Baa2		
TECO Energy, Inc.	Baa3	Monongahela Power Company	Baa3	Superior Water, Light and Power	Baa1		
UIL Holdings Corporation	Baa3	Nevada Power Company	Ba3	Texas-New Mexico Power Company	Baa3		
UniSource Energy Corporation	Ba1	Northern Indiana Public Service	Baa2	Toledo Edison Company	Baa3		
Vectren Utility Holdings, Inc.	Baa1	Northern States Power (Minnesota)	A3	Transelec S.A. *	Baa3		
Westar Energy, Inc.	Baa3	Northern States Power (Wisconsin)	A3	United Illuminating Company	Baa2		
Wisconsin Energy Corporation	A3	NorthWestern Corporation	Baa2	West Penn Power Company	Baa3		
Xcel Energy Inc.	Baa1	Nova Scotia Power Inc.	Baa1	Western Massachusetts Electric	Baa2		
		Ohio Power Company	A3				
		Oklahoma Gas & Electric Company	A2				
		Pacific Gas & Electric Company	A3				
		PacifiCorp	Baa1				
		Portland General Electric Company	Baa2				
		Progress Energy Carolinas, Inc.	A3				
		Progress Energy Florida, Inc.	A3				
		Public Service Company of Colorado	Baa1				
		Public Service Company of NH	Baa2				

* Transmission only

U.S. Regulated Electric Utilities

PORTFOLIO: Parents		Vertically Integrated Utilities		T & D utilities		LDC utilities	
Entity Name	Current LT Rating	Entity Name	Current LT Rating	Entity Name	Current LT Rating	Entity Name	Current LT Rating
Public Service Company of NM	Baa3						
Public Service Company of Oklahoma	Baa1						
Puget Sound Energy, Inc.	Baa3						
San Diego Gas & Electric Company	A2						
Sierra Pacific Power Company	Ba3						
South Carolina Electric & Gas	A3						
Southern California Edison Company	A3						
Southern Indiana Gas & Electric	Baa1						
Southwestern Electric Power	Baa3						
Southwestern Public Service	Baa1						
Tampa Electric Company	Baa1						
Tucson Electric Power Company	Baa3						
Union Electric Company	Baa2						
Virginia Electric and Power Company	Baa1						
Wisconsin Electric Power Company	A1						
Wisconsin Power and Light Company	A2						
Wisconsin Public Service Corporation	A2						

* Transmission only

U.S. Regulated Electric Utilities

PORTFOLIO: Unregulated Power - affiliated		Unregulated Power - Independent		Cooperatives	
Entity Name	Current LT Rating	Entity Name	Current LT Rating	Entity Name	Current LT Rating
Allegheny Energy Supply Company	Baa3	AEI	B1	Arkansas Electric Cooperative Corporation	A2
AmerenEnergy Generating Company	Baa3	AES Chivor & Cia. S.C.A. E.S.P.	Baa2	Associated Electric Cooperative, Inc.	A2
Exelon Generation Company, LLC	A3	AES Gener S.A.	Baa3	Basin Electric Power Cooperative	A2
FirstEnergy Solutions Corp.	Baa2	Calpine Corporation	B2	Big Rivers Electric Corporation	(P)Baa1
KeySpan Generation LLC	Baa1	Covanta Holding Corporation	Baa2	Buckeye Power, Inc.	A2
PPL Energy Supply, LLC	Baa2	Dynegy Holdings Inc.	B2	Chugach Electric Association, Inc.	A3
PSEG Power L.L.C.	Baa1	Edison Mission Energy	B1	Dairyland Power Cooperative	A2
Southern Power Company	Baa1	Empresa Electrica del Norte Grande S.A.	Baa3	Golden Spread Electric Cooperative, Inc.	A3
System Energy Resources, Inc.	(P)Ba1	Mirant Corporation	B1	Great River Energy	A3
		NRG Energy, Inc.	Baa3	Hoosier Energy Rural Electric Cooperative Inc	Baa2
		RRI Energy, Inc.	B1	Minnkota Power Cooperative, Inc	Baa1
		Texas Competitive Electric Holdings Co LLC	Caa2	Oglethorpe Power Corporation	Baa1
		TransAlta Corporation	Baa2	Old Dominion Electric Cooperative	A3
				PowerSouth Energy Cooperative	Baa1
				South Mississippi Electric Power Assoc	Baa1
				Tri-State G&T Association Inc.	Baa2

U.S. Regulated Electric Utilities

Appendix C: Estimated Inflection Points by State

State-by-State Electricity Bill/Household Disposable Income Study*

State	Source: BEA	EIA	Moody's	Estimates	Un-employment Rate		
	2007 Annual Household Income	2007 Annual Household Disposable Income	2007 Average Retail Electricity Price (Cents/KWh)	2007 Average Yearly Bill / Disposable Income	Implied Max Rate	Implied Max rate Increase	Un-employment Rate
Colorado	\$61,141	\$42,799	9.25	1.8%	\$0.251	172%	7.9%
Utah	\$53,529	\$37,470	8.15	2.1%	\$0.195	139%	6.0%
Minnesota	\$58,058	\$40,641	9.18	2.3%	\$0.204	122%	8.1%
New Mexico	\$44,356	\$31,049	9.12	2.3%	\$0.202	122%	7.5%
Washington	\$58,080	\$40,656	7.26	2.3%	\$0.158	117%	9.2%
Wyoming	\$48,744	\$34,121	7.75	2.4%	\$0.163	111%	5.3%
New Hampshire	\$67,576	\$47,303	14.88	2.4%	\$0.312	110%	6.5%
Idaho	\$49,184	\$34,429	6.36	2.4%	\$0.133	109%	8.0%
Michigan	\$49,370	\$34,559	10.21	2.4%	\$0.210	106%	14.2%
California	\$55,734	\$39,014	14.42	2.6%	\$0.280	94%	11.3%
Illinois	\$52,506	\$36,754	10.12	2.6%	\$0.194	92%	10.3%
Wisconsin	\$51,277	\$35,894	10.87	2.6%	\$0.206	90%	9.0%
Kansas	\$48,497	\$33,948	8.19	2.7%	\$0.154	88%	7.8%
Rhode Island	\$54,210	\$37,947	14.05	2.7%	\$0.260	85%	11.3%
Nebraska	\$49,174	\$34,422	7.59	2.7%	\$0.140	84%	5.4%
Alaska	\$62,993	\$44,095	15.18	2.7%	\$0.277	82%	10.3%
Oregon	\$50,235	\$35,165	8.19	2.8%	\$0.145	77%	10.6%
Montana	\$43,655	\$30,559	8.77	2.8%	\$0.155	76%	7.1%
North Dakota	\$47,205	\$33,044	7.30	2.9%	\$0.128	75%	5.1%
District of Columbia	\$50,783	\$35,548	11.18	2.9%	\$0.192	71%	10.0%
New Jersey	\$60,508	\$42,356	14.14	2.9%	\$0.242	71%	9.1%
Iowa	\$48,908	\$34,236	9.45	2.9%	\$0.161	70%	5.8%
South Dakota	\$46,418	\$32,493	8.07	3.0%	\$0.137	69%	5.4%
Massachusetts	\$58,463	\$40,924	16.23	3.0%	\$0.269	65%	8.7%
Vermont	\$47,390	\$33,173	14.15	3.0%	\$0.233	65%	7.9%
Virginia	\$59,161	\$41,413	8.74	3.1%	\$0.143	64%	7.1%
Ohio	\$49,099	\$34,369	9.57	3.1%	\$0.155	62%	10.8%
West Virginia	\$42,891	\$29,464	6.73	3.1%	\$0.108	60%	7.3%
Maine	\$47,894	\$33,526	16.52	3.1%	\$0.264	60%	8.9%
Indiana	\$47,453	\$33,217	8.26	3.2%	\$0.131	58%	10.7%
Missouri	\$46,005	\$32,204	7.69	3.2%	\$0.120	56%	9.8%
Maryland	\$65,630	\$45,941	11.89	3.4%	\$0.176	48%	7.0%
Pennsylvania	\$48,437	\$33,906	10.95	3.4%	\$0.162	48%	8.5%
New York	\$48,944	\$34,261	17.10	3.6%	\$0.236	38%	8.9%
Nevada	\$54,058	\$37,841	11.82	3.7%	\$0.160	35%	10.9%
Oklahoma	\$43,216	\$30,251	8.58	3.7%	\$0.115	34%	6.5%
Georgia	\$48,641	\$34,049	9.10	3.8%	\$0.121	33%	9.7%

U.S. Regulated Electric Utilities

State-by-State Electricity Bill/Household Disposable Income Study*

State	Source: BEA 2007 Annual Household Income	EIA 2007 Annual Household Disposable Income	Moody's 2007 Average Retail Electricity Price (Cents/KWh)	Estimates 2007 Average Yearly Bill / Disposable Income	Implied Max Rate	Implied Max rate increase	Un-employment Rate
Kentucky	\$39,452	\$27,616	7.34	3.9%	\$0.095	29%	10.2%
Connecticut	\$64,141	\$44,899	19.11	3.9%	\$0.245	28%	8.1%
Delaware	\$54,589	\$38,212	13.16	4.0%	\$0.166	26%	8.0%
Arizona	\$47,215	\$33,051	9.66	4.0%	\$0.121	25%	8.7%
Arkansas	\$40,795	\$28,557	8.73	4.1%	\$0.106	22%	8.2%
Hawaii	\$64,022	\$44,815	24.12	4.2%	\$0.285	18%	6.8%
North Carolina	\$43,513	\$30,459	9.40	4.2%	\$0.111	18%	10.3%
South Carolina	\$44,213	\$30,949	9.19	4.3%	\$0.107	16%	10.7%
Tennessee	\$41,195	\$28,837	7.84	4.4%	\$0.089	14%	9.8%
Florida	\$45,794	\$32,056	11.22	4.9%	\$0.115	2%	10.0%
Alabama	\$42,212	\$29,548	9.32	4.9%	\$0.094	1%	8.8%
Louisiana	\$41,313	\$28,919	9.37	5.0%	\$0.094	1%	7.3%
Texas	\$46,053	\$32,237	12.34	5.2%	\$0.118	-4%	7.8%
Mississippi	\$37,279	\$26,095	9.36	5.4%	\$0.086	-8%	11.4%
National	\$50,233	\$35,163	10.65	3.4%	\$0.157	47%	8.6%

* Assumes implied maximum electric bills of 5% of calculated household disposable income.

U.S. Investor-Owned Electric Utilities

Moody's Related Research**Industry Outlooks**

- U.S. Investor-Owned Electric Utility Sector, January 2009 (113690)
- North American Natural Gas Transmission & Distribution, March 2009 (115150)
- U.S. Coal Industry Outlook: Six-Month Update, April 2009 (116778)
- EMEA Electric and Gas Utilities, November 2008 (112344)

Special Comments

- Right-Way Hedging for Power Companies, June 2009 (117978)
- New Nuclear Generation: Ratings Pressure Increasing, June 2009 (117883)
- Texas T&D Utilities: Low Business Risk, but Credit Challenges Remain, June 2009 (117479)
- Proposed Wider Notching Between Certain Senior Secured Debt Ratings and Senior Unsecured Debt Ratings for Investment Grade Regulated Utilities, May 2009 (116748)
- Carbon Risks Becoming More Imminent for U.S. Electric Utility Sector, March 2009 (115175)
- Managing Ratings With Increased Pension Liability, March 2009 (115011)
- Near Term Bank Credit Facility Renewals To Be More Challenging For U.S. Electric And Gas Utilities, January 2009 (114031)
- Investor-Owned Electric Utilities in Ohio, January 2009 (114137)
- Carbon Dioxide: Regulating Emissions Following a Long and Winding Road, November 2008 (112822)
- U.S. Investor Owned Electric Utilities Somewhat Insulated (but not immune) from market stress, September 2008 (111891)
- New Nuclear Generating Capacity: Potential Credit Implications for U.S. Investor Owned Utilities, May 2008 (109152)
- EU Climate Change Strategy, May 2008 (108846)
- Decommissioning and Waste Costs for New Generation of Nuclear Power Structures, May 2008 (109086)
- New Generating Capacity in a Carbon Constrained World, March 2008 (107453)

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.

U.S. Investor-Owned Electric Utilities

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U.S. Investor-Owned Electric Utilities

Report Number: 118776

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Moody's Investors Service

McGill, James T(Z71171)

From: McGill, James T(Z71171)
Sent: Wednesday, August 12, 2009 8:33 AM
To: 'Moss, Mitchell'
Subject: RE: Moody's Utility Outlook report

Thanks Mitchell.

From: Moss, Mitchell [mailto:Mitchell.Moss@moodys.com]
Sent: Wednesday, August 12, 2009 8:31 AM
To: McGill, James T(Z71171)
Subject: Moody's Utility Outlook report

Jim

Laura asked me to send you the Industry Outlook we recently published. See attached. Let us know if you need anything else.

Mitchell

<<Moody's Utility Outlook 7-2009.pdf>>

Mitchell Moss, CFA
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McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Wednesday, August 12, 2009 4:45 PM
To: 'christine_scaperdas@standardandpoors.com'
Cc: McGill, James T(Z71171)
Subject: Arizona Public Service Company - Coconino Bonds - 2009B Series

Attachments: Coconino Loan Agreement-2009.pdf; Coconino Series Indenture.pdf; Series Indenture-Coconino 2009 Series B.pdf; APS Financing Calendar 08.06.09.pdf; APS Coconino 2009B Dist List 08.06.09.pdf; APS - Letter of Credit.DOC

Hi Christine! We spoke a week or so ago about our desire to enhance our Coconino 1999 and 1996A bonds with a Letter of Credit. Attached (in two emails) are the documents I believe you will need in order to provide us with a ratings letter. These are in substantially final format. If you need anything else, please let me know. We are planning on mailing the Official Statement on September 8th with pricing occurring on September 15th. Christine, I will be sending another email with the remainder of the documents you will need. Thank you, we appreciate your help in this matter.



Coconino Loan Agreement-2009.p..



Coconino Series Indenture.pdf



Series Indenture-Coconino 2009 Series B.pdf



APS Financing



APS Coconino 2009B Dist List 08.06.09.pdf



APS - Letter of Credit.DOC

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
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Phone: 602-250-5630

McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Wednesday, August 12, 2009 4:45 PM
To: 'christine_scaperdas@standardandpoors.com'
Cc: McGill, James T(Z71171)
Subject: Coconino Bonds

Attachments: US_NE_500366136_3.DOC; Coconino Indenture.pdf; US_NE_500371728_2.DOC; APS - Reimbursement Agreement.DOC

Christine, here is the second email with documents attached.



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Coconino
Indenture.pdf



US_NE_500371728
_2.DOC



APS -
bursement Agreeeme

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
Pinnacle West Capital Corporation
Phone: 602-250-5630

McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Thursday, August 13, 2009 3:42 PM
To: McGill, James T(Z71171)
Subject: FW: Arizona Public Service Company - Coconino Bonds - 2009B Series

Attachments: Coconino Loan Agreement-2009.pdf; Coconino Series Indenture.pdf; Series Indenture-Coconino 2009 Series B.pdf; APS Financing Calendar 08.06.09.pdf; APS Coconino 2009B Dist List 08.06.09.pdf; APS - Letter of Credit.DOC

From: Dolyniuk, Karen E(J97440)
Sent: Wednesday, August 12, 2009 4:47 PM
To: 'Mangaroo, Chetara'
Subject: Arizona Public Service Company - Coconino Bonds - 2009B Series

Hi Tara! We spoke a week or so ago about our desire to enhance our Coconino 1999 and 1996A bonds with a Letter of Credit. Attached (in two emails) are the documents I believe you will need in order to provide us with a ratings letter. These are in substantially final format. If you need anything else, please let me know. We are planning on mailing the Official Statement on September 8th with pricing occurring on September 15th. I will be sending another email with the remainder of the documents you will need. Thank you, we appreciate your help in this matter.



Coconino Loan Agreement-2009.p..



Coconino Series Indenture.pdf ...



Series



APS Financing



APS Coconino



APS - Letter of Credit.DOC (20...

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
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McGill, James T(Z71171)

From: Dolyniuk, Karen E(J97440)
Sent: Thursday, August 13, 2009 3:41 PM
To: McGill, James T(Z71171)
Subject: FW: Coconino Bonds

Attachments: US_NE_500366136_3.DOC; Coconino Indenture.pdf; US_NE_500371728_2.DOC; APS - Reimbursement Agreement.DOC

From: Dolyniuk, Karen E(J97440)
Sent: Wednesday, August 12, 2009 4:47 PM
To: 'Mangaroo, Chetara'
Subject: FW: Coconino Bonds

Tara, here is the second email with documents attached.



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_3.DOC (100 KB)...ndenture.pdf (8 MB_2.DOC (340 KB)...bursement Agreeeme

Karen E. Dolyniuk, CTP
Manager, Treasury Operations
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Phone: 602-250-5630

McGill, James T(Z71171)

From: Schumacher, Laura [Laura.Schumacher@moodys.com]
Sent: Thursday, August 13, 2009 6:26 AM
To: McGill, James T(Z71171)
Subject: FW: Update Rating Methodologies
Attachments: Methodology SC - August 2009.pdf; Utility Rating Methodology - August 2009.pdf

Dear Jim,

Yesterday, Moody's published updated methodologies for evaluating corporate electric and gas utilities, networks, and unregulated/wholesale power companies. Attached for ease of reference is a Special Comment introducing the updates as well as a copy of the Regulated Electric and Gas Utilities methodology.

If you have any questions, or would like any additional information, please give me a call.

Regards,
Laura

<<Methodology SC - August 2009.pdf>> <<Utility Rating Methodology - August 2009.pdf>>

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Special Comment

Moody's Global Infrastructure Finance

August 2009

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Moody's Related Research	3

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Powering Up...

Moody's Publishes Regulated Utility, Unregulated Utility, and Regulated Network Methodologies

Introduction

Moody's has published updated methodologies for evaluating corporate electric and gas utilities, networks, and unregulated power companies. As further outlined below, the three new methodologies, one for regulated networks, one for regulated utility companies, and one for unregulated utilities and power companies, replace a number of older methodologies and special reports on the sector. While reflecting similar principles as earlier methodologies, the new methodologies better reflect the globally evolving regulatory frameworks in the sector and other industry dynamics.

The methodologies standardize the analysis of quantitative and qualitative factors for the three types of companies covered in this sector. The purpose of the methodologies is to enable investors, issuers and other interested market participants gain a clear understanding of how Moody's assesses credit risk for companies in the utility and networks sectors. Our objective is for users of the methodologies to be able to ascertain a company's rating (senior unsecured ratings for investment-grade issuers and Corporate Family Ratings for speculative grade issuers) within two alpha-numeric notches.

The three methodologies will apply globally. As such, they do not contain exhaustive country-specific discussions of all the factors that Moody's may consider in every rating. Regulatory, accounting and pricing characteristics, as well as business model and financing structure can vary widely from country to country. Instead, we highlight the major regional differences, and provide insight on the varying operating environments.



Moody's Investors Service

Moody's Publishes Regulated Utility, Unregulated Utility and Regulated Network Methodologies

Allocation of Companies to the New Methodologies

Moody's has published three methodologies for evaluating corporate electric and gas utilities and networks, dividing the issuer universe into *regulated electric and gas networks*, *regulated electric and gas utilities*, and *unregulated utilities and power companies*. Please refer to figure 1 for examples of companies included in each methodology and the number of issuers and amount of debt covered by each methodology.

Figure 1

New Methodologies	Total number of issuers affected	Debt affected (US\$ BN)	Issuer Examples
Regulated Electric and Gas Networks	53	64	National Grid Gas Plc (U.K.), Etsa Utilities Finance Pty (Australia)
Regulated Electric and Gas Utilities	250	650	Florida Power and Light Company (U.S.), Tokyo Electric (Japan)
Unregulated Utilities and Power Companies	53	395	E.ON (Germany), Exelon Generation Company (U.S.), Endesa Chile (Chile)

Moody's *Regulated Electric and Gas Networks* rating methodology covers regulated companies that are primarily engaged in the transmission and/or distribution of electricity and/or natural gas. The majority of these issuers are based in Europe and Australia. Utilities rated pursuant to this methodology generally benefit from relative revenue certainty as their tariffs are often set in advance for a period of several years. By and large, these companies are neither vertically integrated beyond transmission and distribution nor involved in delivery to the end-use customer.

Moody's *Regulated Electric and Gas Utilities* rating methodology covers investor-owned and commercially oriented government owned companies that are engaged in the production, transmission, distribution and/or sale of electricity and/or natural gas. The majority of companies rated pursuant to this methodology are vertically integrated and involved in the supply of the commodity to the end-use customer. The rates charged to customers are generally regulated based on costs already incurred by a utility and a rate of return.

Moody's *Unregulated Utilities and Power Companies* rating methodology covers unregulated utility companies whose principal business is the production and/or procurement of electricity and gas and the supply of such commodities to end users. These companies generally operate in countries that have undergone a process of liberalization and deregulation of the upstream generation and wholesale markets and the downstream supply market. The methodology also provides the framework for the analysis of unregulated wholesale power companies, whose principal business is the production and sale of electricity in an unregulated or lightly regulated marketplace to wholesale customers.

As before, Moody's will continue to rate non-corporate utilities with separate methodologies. As a result, the following types of issuers are covered by other methodologies: power project financings, municipal utilities, and electric cooperatives. In addition, North American natural gas transmission companies will continue to be covered under the following two methodologies: North American Diversified Natural Gas Transmission and Distribution Companies methodology (March 2007) or the North American Natural Gas Pipelines (December 2006).

Moody's Publishes Regulated Utility, Unregulated Utility and Regulated Network Methodologies

As a result of the publication of the three new methodologies, Moody's will discontinue the use of previous methodologies, as further outlined in figure 2.

Figure 2

Replaced Methodologies

The methodologies and reports listed below have been superseded by the three newly published methodologies and will no longer be used by Moody's analysts or referenced in our credit research products:

- North American Regulated Gas Distribution Industry (Local Distribution Companies) (2006)
- Rating Methodology: Global Regulated Electric Utilities (2005)
- UK Independent Gas Distribution Companies: Moody's Comments on Rating Approach as Regulatory Framework Evolves (2008)
- UK Independent Gas Distribution Companies: Similar Fundamentals to Regulated Water at Slightly Lower Leverage (2004)

Moody's Related Research

Special Comment

- Default, Recovery, and Credit Loss Rates for Regulated Utilities, 1983-2008, May 2009 (115424)

Rating Methodologies

- Regulated Electric and Gas Networks, August 2009 (118786)
- Regulated Electric and Gas Utilities, August 2009 (118481)
- Unregulated Utilities and Power Companies, August 2009 (118508)

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.

Moody's Publishes Regulated Utility, Unregulated Utility and Regulated Network Methodologies

Report Number: 119457

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Moody's Investors Service

Rating Methodology

Moody's Global Infrastructure Finance

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(Continued on back page)

August 2009

Regulated Electric and Gas Utilities

Summary

This rating methodology provides guidance on Moody's approach to assigning credit ratings to electric and gas utility companies worldwide whose credit profile is influenced to a large degree by the presence of regulation. It replaces the Global Regulated Electric Utilities methodology published in March 2005 and the North American Regulated Gas Distribution Industry (Local Distribution Companies) methodology published in October 2006. While reflecting similar core principles as these previous methodologies, this updated framework incorporates refinements that better reflect the changing dynamics of the regulated electric and gas industry and the way Moody's applies its industry methodologies.

The goal of this rating methodology is to assist investors, issuers, and other interested parties in understanding how Moody's arrives at company-specific ratings, what factors we consider most important for this sector, and how these factors map to specific rating outcomes. Our objective is for users of this methodology to be able to estimate a company's ratings (senior unsecured ratings for investment-grade issuers and Corporate Family Ratings for speculative-grade issuers) within two alpha-numeric rating notches.

Regulated electric and gas companies are a diverse universe in terms of business model (ranging from vertically integrated to unbundled generation, transmission and/or distribution entities) and regulatory environment (ranging from stable and predictable regulatory regimes to those that are less developed or undergoing significant change). In seeking to differentiate credit risk among the companies in this sector, Moody's analysis focuses on four key rating factors that are central to the assignment of ratings for companies in the sector. The four key rating factors encompass nine specific elements (or sub-factors), each of which map to specific letter ratings (see Appendix A). The four factors are as follows:

1. Regulatory Framework
2. Ability to Recover Costs and Earn Returns
3. Diversification
4. Financial Strength and Liquidity



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Regulated Electric and Gas Utilities

This methodology pertains to regulated electric and gas utilities and excludes regulated electric and gas networks (companies primarily engaged in the transmission and/or distribution of electricity and/or natural gas that do not serve retail customers) and unregulated utilities and power companies, which are covered by separate rating methodologies. Municipal utilities and electric cooperatives are also excluded and covered by separate rating methodologies.

In Appendix A of this methodology, we have included a detailed rating grid for the companies covered by the methodology. For each company, the grid maps each of these key rating factors and shows an indicated alpha-numeric rating based on the results from the overall combination of the factors (see Appendix B). We note, however, that many companies will not match each dimension of the analytical framework laid out in the rating grid exactly and that from time to time a company's performance on a particular rating factor may fall outside the expected range for a company at its rating level. These companies are categorized as "outliers" for that rating factor. We discuss some of the reasons for these outliers in this methodology as well as in published credit opinions and other company-specific analysis.

The purpose of the rating grid is to provide a reference tool that can be used to approximate credit profiles within the regulated electric and gas utility sector. The grid provides summarized guidance on the factors that are generally most important in assigning ratings to the sector. While the factors and sub-factors within the grid are designed to capture the fundamental rating drivers for the sector, this grid does not include every rating consideration and does not fit every business model equally. Therefore, we outline additional considerations that may be appropriate to apply in addition to the four rating factors. Moody's also assesses other rating factors that are common across all industries, such as event risk, off-balance sheet risk, legal structure, corporate governance, and management experience and credibility. Furthermore, most of our sub-factor mapping uses historical financial results to illustrate the grid while our ratings also consider forward looking expectations. As such, the grid-indicated rating is not expected to always match the actual rating of each company. The text of the rating methodology provides insights on the key rating considerations that are not represented in the grid, as well as the circumstances in which the rating effect for a factor might be significantly different from the weight indicated in the grid.

Readers should also note that this methodology does not attempt to provide an exhaustive list of every factor that can be relevant to a utility's ratings. For example, our analysis covers factors that are common across all industries (such as coverage metrics, debt leverage, and liquidity) as well as factors that can be meaningful on a company or industry specific basis (such as regulation, capital expenditure needs, or carbon exposure).

This publication includes the following sections:

- **About the Rated Universe:** An overview of the regulated electric and gas industries
- **About the Rating Methodology:** A description of our rating methodology, including a detailed explanation of each of the key factors that drive ratings
- **Assumptions and Limitations:** Comments on the rating methodology's assumptions and limitations, including a discussion of other rating considerations that are not included in the grid

In the appendices, we also provide tables that illustrate the application of the methodology grid to 30 representative electric and gas utility companies with explanatory comments on some of the more significant differences between the grid-implied rating and our actual rating (Appendix C). We also provide definitions of key ratios (Appendix D), an industry overview (Appendix E) and a discussion of the key issues facing the industry over the intermediate term (Appendix F) and regional considerations (Appendix G).

About the Rated Universe

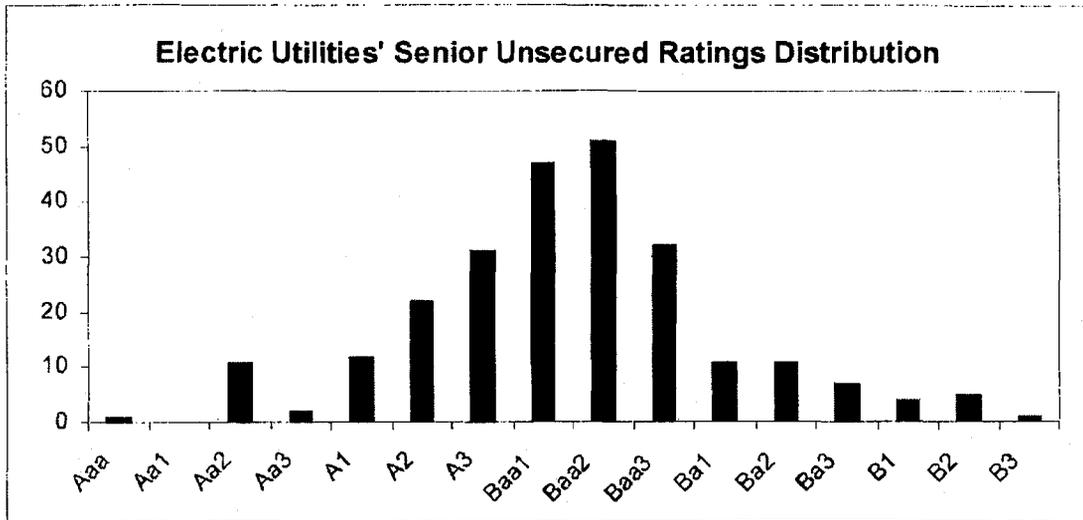
The rating methodology covers investor-owned and commercially oriented government owned companies worldwide that are engaged in the production, transmission, distribution and/or sale of electricity and/or natural gas. It covers a wide variety of companies active in the sector, including vertically integrated utilities, transmission and distribution companies, some U.S. transmission-only companies, and local gas distribution companies (LDCs). For the LDCs, we note that this methodology is concerned principally with operating utilities regulated by their local jurisdictions and not with gas companies that have significant non-utility

Regulated Electric and Gas Utilities

businesses¹. In addition, this methodology includes both holding companies as well as operating companies. For holding companies, actual ratings may be lower than methodology grid-implied ratings due to the structural subordination of the holding company debt to the operating company debt. In order for a utility to be covered by this methodology, the company must be an investor-owned or commercially oriented government owned entity and be subject to some degree of government regulation or oversight. This methodology excludes regulated electric and gas networks, electric generating companies² and independent power producers operating predominantly in unregulated power markets, municipally owned utilities, electric cooperative utilities, and power projects, which are covered in separate rating methodologies.

The rated universe includes approximately 250 entities that are either utility operating companies or a parent holding company with one or more utility company subsidiaries that operate predominantly in the electric and gas utility business. They account for about US\$650 billion of total outstanding long-term debt instruments. In general, ratings used in this methodology are the Senior Unsecured ("SU") rating for investment grade companies, the Corporate Family Rating ("CFR") for non-investment grade companies, and the Baseline Credit Assessment ("BCA") for Government Related Issuers (GRI). A subset of 30 of these entities is included in the methodology, representing a sampling of the universe to which this methodology applies.

Geographically, this methodology covers companies in the Americas, Europe, Middle East, Africa, Japan, and the Asia/Pacific region. The ratings spectrum for the sector ranges from Aaa to B3, with the actual rating distribution of the issuers included (both holding companies and operating companies) shown on the following table:



Although all of these companies are affected to some degree by government regulation or oversight, country-by-country regulatory differences and cultural and economic characteristics are also important credit considerations. There is little consistency in the approach and application of regulatory frameworks around the world. Some regulatory frameworks are highly supportive of the utilities in their jurisdictions, in some cases offering implied sovereign support to ensure reliability of electric supply. Other regulatory frameworks are less supportive, more unpredictable or affected by political influence that can increase uncertainty and negatively affect overall credit quality.

¹ These companies are assessed under the rating methodology "North American Diversified Natural Gas Transmission and Distribution Companies", March 2007.

² The six Korean generation companies are included in this methodology as they are subject to regulation and Moody's views them and their 100% parent and sole off-taker KEPCO on a consolidated basis. The Brazilian generation companies are included as they are also subject to regulatory intervention.

Regulated Electric and Gas Utilities

About this Rating Methodology

Moody's approach to rating companies in the regulated electric and gas utility sector, as outlined in this rating methodology, incorporates the following steps:

1. Identification of the Key Rating Factors

In general, Moody's rating committees for the regulated electric and gas utility sector focus on a number of key rating factors which we identify and quantify in this methodology. A change in one or more of these factors, depending on its weighting, is likely to influence a utility's overall business and financial risk. We have identified the following four key rating factors and nine sub-factors when assigning ratings to regulated electric and gas utility issuers:

Rating Factor / Sub-Factor Weighting - Regulated Utilities

Broad Rating Factors	Broad Rating Factor Weighting	Rating Sub-Factor	Sub-Factor Weighting
Regulatory Framework	25%		25%
Ability to Recover Costs and Earn Returns	25%		25%
Diversification	10%	Market Position	5*
		Generation and Fuel Diversity	5%**
Financial Strength, Liquidity and Key Financial Metrics	40%	Liquidity	10%
		CFO pre-WC + Interest / Interest	7.5%
		CFO pre-WC / Debt	7.5%
		CFO pre-WC - Dividends / Debt	7.5%
		Debt/Capitalization or Debt / Regulated Asset Value	7.5%
Total	100%		100%

*10% weight for issuers that lack generation; **0% weight for issuers that lack generation

These factors are critical to the analysis of regulated electric and gas utilities and, in most cases, can be benchmarked across the industry. The discussion begins with a review of each factor and an explanation of its importance to the rating.

2. Measurement of the Key Rating Factors

We next explain the elements we consider and the metrics we use to measure relative performance on each of the four factors. Some of these measures are quantitative in nature and can be specifically defined. However, for other factors, qualitative judgment or observation is necessary to determine the appropriate rating category.

Moody's ratings are forward looking and attempt to rate through the industry's characteristic volatility, which can be caused by weather variations, fuel or commodity price changes, cost deferrals, or reasonable delays in regulatory recovery. The rating process also makes extensive use of historic financial statements. Historic results help us understand the pattern of a utility's financial and operating performance and how a utility compares to its peers. While rating committees and the rating process use both historical and projected financial results, this document makes use only of historic data, and does so solely for illustrative purposes. All financial measures incorporate Moody's standard adjustments to income statement, cash flow statement, and balance sheet amounts for (among other things) underfunded pension obligations and operating leases.

3. Mapping Factors to Rating Categories

After identifying the measurement criteria for each factor, we match the performance of each factor and sub-factor to one of Moody's broad rating categories (Aaa, Aa, A, Baa, Ba, and B). In this report, we provide a

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range or description for each of the measurement criteria. For example, we specify what level of CFO pre-WC plus Interest/Interest is generally acceptable for an A credit versus a Baa credit, etc.

4. Mapping Issuers to the Grid and Discussion of Grid Outliers

For each factor and sub-factor, we provide a table showing how a subset of the companies covered by the methodology maps within the specific factors and sub-factors. We recognize that any given company may perform higher or lower on a given factor than its actual rating level will otherwise indicate. These companies are identified as "outliers" for that factor. A company whose performance is two or more broad rating categories higher than its rating is deemed a positive outlier for that factor. A company whose performance is two or more broad rating categories below is deemed a negative outlier. We also discuss the general reasons for such outliers for each factor.

5. Discussion of Assumptions, Limitations and Other Rating Considerations

This section discusses limitations in the use of the grid to map against actual ratings as well as limitations and key assumptions that pertain to the overall rating methodology.

6. Determining the Overall Grid-Indicated Rating

To determine the overall rating, each of the factors and sub-factors is converted into a numeric value based on the following scale:

Ratings Scale

Aaa	Aa	A	Baa	Ba	B
1	3	6	9	12	15

Each sub-factor's numeric value is multiplied by an assigned weight and then summed to produce a composite weighted-average score. The total sum of the factors is then mapped to the ranges specified in the table below, and the indicated alpha-numeric rating is determined based on where the total score falls within the ranges.

Factor Numerics

Composite Rating

Indicated Rating	Aggregate Weighted Factor Score
Aaa	< 1.5
Aa1	1.5 < 2.5
Aa2	2.5 < 3.5
Aa3	3.5 < 4.5
A1	4.5 < 5.5
A2	5.5 < 6.5
A3	6.5 < 7.5
Baa1	7.5 < 8.5
Baa2	8.5 < 9.5
Baa3	9.5 < 10.5
Ba1	10.5 < 11.5
Ba2	11.5 < 12.5
Ba3	12.5 < 13.5
B1	13.5 < 14.5
B2	14.5 < 15.5
B3	15.5 < 16.5

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For example, an issuer with a composite weighting factor score of 8.2 would have a Baa1 grid-indicated rating. We use a similar procedure to derive the grid-indicated ratings in the tables embedded in the discussion of each of the four broad rating categories.

The Key Rating Factors

Moody's analysis of electric and gas utilities focuses on four broad factors:

1. Regulatory Framework
2. Ability to Recover Costs and Earn Returns
3. Diversification
4. Financial Strength and Liquidity

Rating Factor 1: Regulatory Framework (25%)

Why it Matters

For a regulated utility, the predictability and supportiveness of the regulatory framework in which it operates is a key credit consideration and the one that differentiates the industry from most other corporate sectors. The most direct and obvious way that regulation affects utility credit quality is through the establishment of prices or rates for the electricity, gas and related services provided (revenue requirements) and by determining a return on a utility's investment, or shareholder return. The latter is largely addressed in Factor 2, Ability to Recover Cost and Earn Returns, discussed below. However, in addition to rate setting, there are numerous other less visible or more subtle ways that regulatory decisions can affect a utility's business position. These can include the regulators' ability to pre-approve recovery of investments for new generation, transmission or distribution; to allow the inclusion of generation asset purchases in utility rate bases; to oversee and ultimately approve utility mergers and acquisitions; to approve fuel and purchased power recovery; and to institute or increase ring-fencing provisions.

How We Measure It for the Grid

For a regulated utility company, we consider the characteristics of the regulatory environment in which it operates. These include how developed the regulatory framework is; its track record for predictability and stability in terms of decision making; and the strength of the regulator's authority over utility regulatory issues. A utility operating in a stable, reliable, and highly predictable regulatory environment will be scored higher on this factor than a utility operating in a regulatory environment that exhibits a high degree of uncertainty or unpredictability. Those utilities operating in a less developed regulatory framework or one that is characterized by a high degree of political intervention in the regulatory process will receive the lowest scores on this factor. Consideration is given to the substance of any regulatory ring fencing provisions, including restrictions on dividends; restrictions on capital expenditures and investments; separate financing provisions; separate legal structures; and limits on the ability of the regulated entity to support its parent company in times of financial distress. The criteria for each rating category are outlined in the factor description within the rating grid.

For regulated electric utilities with some unregulated operations, consideration will be given to the competitive and business position of these unregulated operations³. Moody's views unregulated operations that have minimal or limited competition, large market shares, and statutorily protected monopoly positions as having substantially less risk than those with smaller market shares or in highly competitive environments. Those businesses with the latter characteristics usually face a higher likelihood of losing customers, revenues, or market share. For electric utilities with a significant amount of such unregulated operations, a lower score could be assigned to this factor than would be if the utility had solely regulated operations.

Moody's views the regulatory risk of U.S. utilities as being higher in most cases than that of utilities located in some other developed countries, including Japan, Australia, and Canada. The difference in risk reflects our view that individual state regulation is less predictable than national regulation; a highly fragmented market in the U.S. results in stronger competition in wholesale power markets; U.S. fuel and power markets are more

³ For diversified gas companies, the "North American Diversified Natural Gas Transmission and Distribution Company" rating methodology is applied.

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volatile; there is a low likelihood of extraordinary political action to support a failing company in the U.S.; holding company structures limit regulatory oversight; and overlapping or unclear regulatory jurisdictions characterize the U.S. market. As a result, no U.S. utilities, except for transmission companies subject to federal regulation, score higher than a single A in this factor.

The scores for this factor replace the classifications we had been using to assess a utility's regulatory framework, namely, the Supportiveness of Regulatory Environment (SRE) framework, outlined in our previous rating methodology (Global Regulated Electric Utilities, March 2005), which we are phasing out. Generally speaking, an SRE 1 score from our previous methodology would roughly equate to Aaa or Aa ratings in this methodology; an SRE 2 score to A or high Baa; an SRE 3 score to low Baa or Ba, and an SRE 4 score to a B. For U.S. and Canadian LDCs, this factor corresponds to the "Regulatory Support" and "Ring-fencing" factors in our previous methodology (North American Regulated Gas Distribution, October 2006).

Factor 1 – Regulatory Framework (25%)

Aaa	Aa	A	Baa	Ba	B
Regulatory framework is fully developed, has a long-track record of being predictable and stable, and is highly supportive of utilities. Utility regulatory body is a highly rated sovereign or strong independent regulator with unquestioned authority over utility regulation that is national in scope.	Regulatory framework is fully developed, has been mostly predictable and stable in recent years, and is mostly supportive of utilities. Utility regulatory body is a sovereign, sovereign agency, provincial, or independent regulator with authority over most utility regulation that is national in scope.	Regulatory framework is fully developed, has above average predictability and reliability, although is sometimes less supportive of utilities. Utility regulatory body may be a state commission or national, state, provincial or independent regulator.	Regulatory framework is a) well-developed, with evidence of some inconsistency or unpredictability in the way framework has been applied, or framework is new and untested, but based on well-developed and established precedents, or b) jurisdiction has history of independent and transparent regulation in other sectors. Regulatory environment may sometimes be challenging and politically charged.	Regulatory framework is developed, but there is a high degree of inconsistency or unpredictability in the way the framework has been applied. Regulatory environment is consistently challenging and politically charged. There has been a history of difficult or less supportive regulatory decisions, or regulatory authority has been or may be challenged or eroded by political or legislative action.	Regulatory framework is less developed, is unclear, is undergoing substantial change or has a history of being unpredictable or adverse to utilities. Utility regulatory body lacks a consistent track record or appears unsupportive, uncertain, or highly unpredictable. May be high risk of nationalization or other significant government intervention in utility operations or markets.

Rating Factor 2: Ability to Recover Costs and Earn Returns (25%)

Why It Matters

Unlike Factor 1, which considers the general regulatory framework under which a utility operates and the overall business position of a utility within that regulatory framework, this factor addresses in a more specific manner the ability of an individual utility to recover its costs and earn a return. The ability to recover prudently incurred costs in a timely manner is perhaps the single most important credit consideration for regulated utilities as the lack of timely recovery of such costs has caused financial stress for utilities on several occasions. For example, in four of the six major investor-owned utility bankruptcies in the United States over the last 50 years, regulatory disputes culminated in insufficient or delayed rate relief for the recovery of costs and/or capital investment in utility plant. The reluctance to provide rate relief reflected regulatory commission concerns about the impact of large rate increases on customers as well as debate about the appropriateness of the relief being sought by the utility and views of imprudence. Currently, the utility industry's sizable capital expenditure requirements for infrastructure needs will create a growing and ongoing need for rate relief for recovery of these expenditures at a time when the global economy has slowed.

How We Measure It for the Grid

For regulated utilities, the criteria we consider include the statutory protections that are in place to insure full and timely recovery of prudently incurred costs. In its strongest form, these statutory protections provide unquestioned recovery and preclude any possibility of legal or political challenges to rate increases or cost recovery mechanisms. Historically, there should be little evidence of regulatory disallowances or delays to

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rate increases or cost recovery. These statutory protections are most often found in strongly supportive and protected regulatory environments such as Japan, for example, where the utilities in that country receive a score of Aa for this factor.

More typically, however, and as is characteristic of most utilities in the U.S., the ability to recover costs and earn authorized returns is less certain and subject to public and sometimes political scrutiny. Where automatic cost recovery or pass-through provisions exist and where there have been only limited instances of regulatory challenges or delays in cost recovery, a utility would likely receive a score of A for this factor. Where there may be a greater tendency for a regulator to challenge cost recovery or some history of regulators disallowing or delaying some costs, a utility would likely receive a Baa rating for this factor. Where there are no automatic cost recovery provisions, a history of unfavorable rate decisions, a politically charged regulatory environment, or a highly uncertain cost recovery environment, lower scores for this factor would apply.

For regulated electric utilities that have some unregulated operations, we assess the likelihood that the utility will be able to pass on costs of its unregulated businesses to unregulated customers. Among the criteria we use to judge this factor include the number and types of different businesses the company is in; its market share in these businesses; whether there are significant barriers to entry for new competitors; and the degree to which the utility is vertically integrated. Those utilities with several businesses with large market shares are generally in a better position to pass on their costs to unregulated customers. Those utilities that have lower market shares in their unregulated activities or are in businesses with few barriers to entry will likely be more at risk in passing on costs, and thus would receive lower scores. A high proportion of unregulated businesses or a higher risk of passing on costs to unregulated customers could result in a lower score for this factor than would apply if the business was completely regulated.

For U.S. and Canadian LDCs, this factor addresses the "Sustainable Profitability" and "Regulatory Support" assessments in the previous LDC rating methodology. While LDCs' authorized returns are comparable to those for their electric counterparts, the smaller, more mature LDCs tend to face less regulatory challenges. Purchased Gas Adjustment mechanisms are the norm and they have made strides in implementing alternative rate designs that decouple revenues from volumes sold.

Factor 2 – Ability to Recover Costs and Earn Returns (25%)

Aaa	Aa	A	Baa	Ba	B
Rate/tariff formula allows unquestioned full and timely cost recovery, with statutory provisions in place to preclude any possibility of challenges to rate increases or cost recovery mechanisms.	Rate/tariff formula generally allows full and timely cost recovery. Fair return on all investments. Minimal challenges by regulators to companies' cost assumptions; consistent track record of meeting efficiency tests.	Rate/tariff reviews and cost recovery outcomes are fairly predictable (with automatic fuel and purchased power recovery provisions in place where applicable), with a generally fair return on investments. Limited instances of regulatory challenges; although efficiency tests may be more challenging; limited delays to rate or tariff increases or cost recovery.	Rate/tariff reviews and cost recovery outcomes are usually predictable, although application of tariff formula may be relatively unclear or untested. Potentially greater tendency for regulatory intervention, or greater disallowance (e.g. challenging efficiency assumptions) or delaying of some costs (even where automatic fuel and purchased power recovery provisions are applicable).	Rate/tariff reviews and cost recovery outcomes are inconsistent, with some history of unfavorable regulatory decisions or unwillingness by regulators to make timely rate changes to address market volatility or higher fuel or purchased power costs. AND/OR Tariff formula may not take into account all cost components; investment are not clearly or fairly remunerated.	Difficult or highly uncertain rate and cost recovery outcomes. Regulators may engage in second-guessing of spending decisions or deny rate increases or cost recovery needed by utilities to fund ongoing operations, or high likelihood of politically motivated interference in the rate/tariff review process. AND/OR Tariff formula may not cover return on investments, only cash operating costs may be remunerated.

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Rating Factor 3 - Diversification (10%)***Why It Matters***

Diversification of overall business operations helps to mitigate the risk that any one part of the company will have a severe negative impact on cash flow and credit quality. In general, a balance among several different businesses, geographic regions, regulatory regimes, generating plants, or fuel sources will diminish concentration risk and reduce the risk that a company will experience a sudden or rapid deterioration in its overall creditworthiness because of an adverse development specific to any one part of its operations.

How We Measure It For the Grid

For transmission and distribution utilities, local gas distribution companies, and other companies without significant generation, the key criterion we use is the diversity of their operations among various markets, geographic regions or regulatory regimes. For these utilities, the first set of criteria, labeled market diversification, account for the full 10% weighting for this factor. A predominately T&D utility with a high degree of diversification in terms of market and/or regulatory regime is less likely to be affected by adverse or unexpected developments in any one of these markets or regimes, and thus will receive the highest scores for this factor. Smaller T&D utilities operating in a limited market area or under the jurisdiction of a single regulatory regime will score lower on the factor, with those that are concentrated in an emerging market or riskier environment receiving the lowest scores.

For vertically integrated utilities with generation, the diversification factor is broadened to include not only the criteria discussed above, but also takes into consideration the diversity of their generating assets and the type of fuel sources which they rely on. An additional but somewhat related consideration is the degree to which the utility is exposed to (or insulated from) commodity price changes. A utility with a highly diversified fleet of generating assets using different types of fuels is generally better able to withstand changes in the price of a particular fuel or additional costs required for particular assets, such as more stringent environmental compliance requirements, and thus would receive a higher rating for this sub-factor. Those utilities with more limited diversification or that are more reliant on a single type of generation and fuel source (measured by energy produced) will be scored lower on this sub-factor. Similarly, those utilities with a high reliance on coal and other carbon emitting generating resources will be scored lower on this factor due to their vulnerability to potential carbon regulations and accompanying carbon costs.

Generally, only the largest vertically integrated utilities or transmission companies with substantial operations that are multinational or national in scope, or whose operations encompass a substantial region within a single country, will receive scores in the highest Aaa or Aa categories for this factor. In the U.S., most of the largest multi-state or multi-regional utilities are scored in the A category, most of the larger single state utilities are scored Baa, and smaller utilities operating in a single state or within a single city are scored Ba. A utility may also be scored higher if it is a combination electric and gas utility, which enhances diversification.

The diversification factor was not included in the previous North American LDC methodology. Most LDCs are small and tend to have little geographic and regulatory diversity. However, they tend to be highly stable due to their customer base and margins that comprise primarily of a large number of residential and small commercial customers that are captive to the utility. This customer composition tends to result in a more stable operating performance than those that have concentrations in certain industrial customers that are prone to cyclical or to bypassing the LDC to obtain gas directly from a pipeline. Pure LDCs are scored under the "Market Position" sub-factor for a full 100% under this factor. As with transmission and distribution utilities, no scores are given for "Fuel/Generation Diversification" as this sub-factor would not be applicable.

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Factor 3: Diversification (10%)

	Aaa	Aa	A	Baa	Ba	B	Sub-Factor Weighting
Market Position	A high degree of multinational/regional diversification in terms of market and/or regulatory regime.	Material operations in more than three nations or geographic regions providing diversification of market and/or regulatory regime.	Material operations in two or three states, nations, or geographic regions and exhibits some diversification of market and/or regulatory regime.	Operates in a single state, nation, or economic region with low volatility with some concentration of market and/or regulatory regime.	Operates in a limited market area with material concentration in market and/or regulatory regime.	Operates in a single market which may be an emerging market or riskier environment, with high concentration risk.	5% *
	For LDCs, extremely low reliance on industrial customers and/or exceptionally large residential and commercial customer base and well above average growth.	For LDCs, very low reliance on industrial customers and/or very large residential and commercial customer base with very high growth.	For LDCs, low reliance on industrial customers and/or high residential and commercial customer base with high growth.	For LDCs, moderate reliance on industrial customers in defensive sectors, moderate residential and customer base.	For LDCs, high reliance on industrial customers in somewhat cyclical sectors, small residential and commercial customer base.	For LDCs, very high reliance on industrial customers in cyclical sectors, very small residential and commercial customer base.	
Generation and Fuel Diversity	A high degree of diversification in terms of generation and/or fuel source, well insulated from commodity price changes, no generation concentration, or 0-20% of generation from carbon fuels.	Some diversification in terms of generation and/or fuel source, affected only minimally by commodity price changes, little generation concentration, or 20-40% of generation from carbon fuels.	May have some concentration in one particular type of generation or fuel source, although mostly diversified, modest exposure to commodity price changes, or 40-55% of generation from carbon fuels.	Some reliance on a single type of generation or fuel source, limited diversification, moderate exposure to commodity prices, or 55-70% of generation from carbon fuels.	Operates with little diversification in terms of generation and/or fuel source, high exposure to commodity price changes, or 70-85% of generation from carbon fuels.	High concentration in a single type of generation or highly reliant on a single fuel source, little diversification, may be exposed to commodity price shocks, or 85-100% of generation from carbon fuels.	5% **

*10% weight for issuers that lack generation **0% weight for issuers that lack generation

Rating Factor 4 – Financial Strength and Liquidity (40%)**Why It Matters**

Since most electric and gas utilities are highly capital intensive, financial strength and liquidity are key credit factors supporting their long-term viability. Financial strength and liquidity are also important to the maintenance of good relationships with regulators, to assure adequate regulatory responsiveness to rate increase requests and for cost recovery, and to avoid the need for sudden or unexpected rate increases to avoid financial problems. Financial strength is also important due to the ongoing need to invest in generation, transmission, and distribution assets that often require substantial amounts of debt financing. Utilities are among the largest debt issuers in the world and typically require consistent access to the capital markets to assure adequate sources of funding and to maintain financial flexibility.

Although ratio analysis is a helpful way of comparing one company's performance to that of another, no single financial ratio can adequately convey the relative credit strength of these highly diverse companies. The relative strength of a company's financial ratios must take into consideration the level of business risk associated with the more qualitative factors in the methodology. *Companies with a lower business risk can have weaker credit metrics than those with higher business risk for the same rating category.*

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Given the long-term nature of many of the capital intensive projects undertaken in the industry and the need to obtain regulatory recovery over an often multi-year time period, it is important to analyze both a utility's historical financial performance as well as its prospective future performance, which may be different from the historic measures. Scores under this factor may be higher or lower than what might be expected from historical results, depending on our view of expected future performance.

How We Measure It For the Grid

In addition to assigning a score for a utility's overall liquidity position and relative access to funding sources and the capital markets, we have identified four key core ratios that we consider the most useful in the analysis of regulated electric and gas utilities. The four ratios are the following:

- Cash from Operations (CFO) pre-Working Capital Plus Interest / Interest
- Cash from Operations (CFO) pre-Working Capital / Debt
- Cash from Operations (CFO) pre-Working Capital – Dividends / Debt
- Debt/Capitalization or Debt / Regulated Asset Value (RAV)

The use of Debt / Capitalization or Debt / Regulated Asset Value will depend largely on the regulatory regime in which the utility operates, as explained below. These credit metrics incorporate all of the standard adjustments applied by Moody's when analyzing financial statements, including adjustments for certain types of off-balance sheet financings and certain other reclassifications in the income statement and cash flow statement.

These cash flow based ratios replace the earnings based metrics in the previous "North American Local Gas Distribution Company" rating methodology, reducing the impact on the grid results from non-cash items, such as pension expense.

The ratio calculations utilized and published for the companies covered by this methodology (including the 30 representative electric and gas utility companies highlighted) are historical three-year averages for the years 2006-2008. Three-year averages are used in part to smooth out some of the year to year volatility in financial performance and financial statement ratios.

Measurement Criteria

Liquidity

Liquidity analysis is a key element in the financial analysis of electric and gas utilities and encompasses a company's ability to generate cash from internal sources, as well as the availability of external sources of financings to supplement these internal sources. Sources of funds are compared to a company's cash needs and other obligations over the next twelve months. The highest "Aaa" and "Aa" scores under this sub-factor would be assigned to those utilities that are financially robust under all or virtually all scenarios, with little to no need for external funding and with unquestioned or superior access to the capital markets. Most utilities, however, receive more moderate scores of between "A" and "Baa" in this sub-factor as most need to rely to some degree on external funding sources to finance capital expenditures and meet other capital needs. Below investment grade scores on the sub-factor are assigned to utilities with weak liquidity or those that rely heavily on debt to finance investments.

CFO pre-Working Capital Plus Interest/Interest or Cash Flow Interest Coverage

The cash flow interest coverage ratio is a basic measure of a utility's ability to cover the cost of its borrowed capital and is an important analytical tool in this highly capital intensive industry. The numerator in the ratio calculation is a measure of cash flow excluding working capital movements plus interest expense, which can vary in significance depending on the utility. The use of CFO pre-WC is more comprehensive than Funds from Operations (FFO) under U.S. Generally Accepted Accounting Principles (GAAP) since it also captures the changes in long-term regulatory assets and liabilities. However, under International Financial Reporting Standards (IFRS), the two measures are essentially the same. The denominator in the ratio calculation is interest expense, which incorporates our standard adjustments to interest expense, such as including

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capitalized interest and re-classifying the interest component of operating lease rental expense. In Brazil, the cash interest amount is adjusted by the variation of non-cash financial expenses derived from foreign exchange and inflation denominated debt.

CFO pre-Working Capital / Debt

This metric measures the cash generating ability of a utility compared to the aggregate level of debt on the balance sheet. This ratio is useful in comparing utilities, many of which maintain a significant amount of leverage in their capital structure. The debt calculation takes into consideration Moody's standard adjustments to balance sheet debt, such as for operating leases, underfunded pension liabilities, basket-adjusted hybrids, guarantees, and other debt-like items.

CFO pre-Working Capital – Dividends / Debt

This ratio is a measure of financial leverage as well as an indicator of the strength of a utility's cash flow after dividend payments are made. Dividend obligations of utilities are often substantial and can affect the ability of a utility to cover its debt obligations. The higher the level of retained cash flow relative to a utility's debt, the more cash the utility has to support its capital expenditure program. Moody's expects that even the financially strongest utilities will need to issue debt on a regular basis to maintain a target capital structure if their asset bases are growing. If a utility with an expanding asset base funds all of its capital expenditures with internally generated cash flow then, in the extreme, the utility's debt to capitalization will trend toward zero.

Debt/Capitalization or Debt/Regulated Asset Value or RAV

This ratio is a traditional measure of leverage and can be a useful way to gauge a utility's overall financial flexibility in light of its overall debt load. High debt to capitalization levels are not only an indicator of higher interest obligations, but can also limit the ability of a utility to raise additional financing if needed and can lead to leverage covenant violations in bank credit facilities or other financing agreements. The denominator of the debt / capitalization ratio includes Moody's standard adjustments, the most important of which for some utilities is the inclusion of deferred taxes in capitalization, which tempers the impact of our debt adjustment.

While debt/capitalization is used predominantly in the Americas, other regions may use a variation of this ratio, namely, debt/regulated asset value or RAV ratio. The regulated asset base is comprised of the physical assets that are used to provide regulated distribution services and the RAV represents the value on which the utility is permitted to earn a return. RAV can be calculated in various ways, using different rules that can be revised periodically, depending on the regulatory regime. Where RAV is calculated using consistent rules (i.e. Australia and Japan), debt/RAV is viewed as superior to debt / capitalization as a credit measure and will be used for this sub-factor. Where RAV does not exist (i.e. North America and most Asian countries) or the method of calculation is subject to arbitrary or unpredictable revisions, we use debt/capitalization.

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Factor 4: Financial Strength, Liquidity and Key Financial Metrics (40%)

	Aaa	Aa	A	Baa	Ba	B	Sub-Factor Weighting
Liquidity	Financially robust under all scenarios with no need for external funding, unquestioned access to the capital markets, and excellent liquidity.	Financially robust under virtually all scenarios with little to no need for external funding, superior access to the capital markets, and very strong liquidity.	Financially strong under most scenarios with some reliance on external funding, solid access to the capital markets, and strong liquidity.	Some reliance on external funding and liquidity is more likely to be affected by external events, good access to the capital markets, and adequate liquidity under most scenarios.	Weak liquidity with more susceptibility to external shocks or unexpected events. Significant reliance on debt funding. Bank financing may be secured and there may be limited headroom under covenants.	Very weak liquidity with limited ability to withstand external shocks or unexpected events. Must use debt to finance investments. Bank financing is normally secured and there may be a high likelihood of breaching one or more covenants.	10%
CFO pre-WC + Interest/Interest	> 8.0x	6.0x - 8.0x	4.5x - 6.0x	2.7x - 4.5x	1.5x - 2.7x	< 1.5x	7.5%
CFO pre-WC/Debt	> 40%	30% - 40%	22% - 30%	13% - 22%	5% - 13%	< 5%	7.5%
CFO pre-WC - Dividends/Debt	> 35%	25% - 35%	17% - 25%	9% - 17%	0% - 9%	< 0%	7.5%
Debt/Capitalization	< 25%	25% - 35%	35% - 45%	45% - 55%	55% - 65%	> 65%	7.5%
Debt/RAV	< 30%	30% - 45%	45% - 60%	60% - 75%	75% - 90%	> 90%	7.5%

Rating Methodology Assumptions and Limitations, and other Rating Considerations

The rating methodology grid incorporates a trade-off between simplicity that enhances transparency and greater complexity that would enable the grid to map more closely to actual ratings. The four rating factors in the grid do not constitute an exhaustive treatment of all of the considerations that are important for ratings of companies in the regulated electric and gas utility sector. In addition, our ratings incorporate expectations for future performance, while the financial information that is used to illustrate the mapping in the grid is mainly historical. In some cases, our expectations for future performance may be impacted by confidential information that we cannot publish. In other cases, we estimate future results based upon past performance, industry trends, and other factors. In either case, we acknowledge that estimating future performance is subject to the risk of substantial inaccuracy.

In choosing metrics for this rating methodology grid, we did not include certain important factors that are common to all companies in any industry, such as the quality and experience of management, assessments of corporate governance, financial controls, and the quality of financial reporting and information disclosure. The assessment of these factors can be highly subjective and ranking them by rating category in a grid would in some cases suggest too much precision in the relative ranking of particular issuers against all other issuers that are rated in various industry sectors.

Ratings may include additional factors that are difficult to quantify or that only have a meaningful effect in differentiating credit quality in some cases. Such factors include environmental obligations, nuclear decommissioning trust obligations, financial controls, and emerging market risk, where ratings might be

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constrained by the uncertainties associated with the local operating, political and economic environment, including possible government interference.

Actual assigned ratings may also reflect circumstances in which the weighting of a particular factor will be different from the weighting suggested by the grid. For example, although Factors 1 and 2 address regulation and cost recovery, in some instances the effect of a company's financial strength and liquidity in Factor 4 will be given greater consideration in an assigned rating than what is indicated by the weighting in the grid.

Conclusion: Summary of the Grid-Indicated Rating Outcomes

For the 30 representative utilities highlighted, the methodology grid-indicated ratings map to current assigned ratings as follows (see Appendix B for the details):

- 30% or 9 companies map to their assigned rating
- 50% or 15 companies have grid-indicated ratings that are within one alpha-numeric notch of their assigned rating
- 20% or 6 companies have grid-indicated ratings that are within two alpha-numeric notches of their assigned rating

Grid-Indicated Rating Outcomes

Map to Assigned Rating	Map to Within One Notch	Map to Within Two Notches
American Electric Power Company, Inc.	Cemig Distribuicao S.A.	Duke Energy Corporation
Arizona Public Service Company	Consolidated Edison Company of New York	Eesti Energia AS
CLP Holdings Limited	Dominion Resources, Inc.	Eskom Holdings Ltd
Consumers Energy Company	EDP - Energias do Brasil S.A.	Korea Electric Power Corporation
Florida Power & Light Company	Emera Incorporated	Northern Illinois Gas Company
PG&E Corporation	The Empire District Electric Company	Tokyo Electric Power Company
Piedmont Natural Gas Company, Inc.	FirstEnergy Corp.	
The Southern Company	Indianapolis Power & Light Company	
Xcel Energy Inc.	Kyushu Electric Power Company	
	Oklahoma Gas and Electric Co.	
	PECO Energy Company	
	Progress Energy Carolinas, Inc.	
	Southern California Edison Company	
	Westar Energy, Inc.	
	Wisconsin Power and Light Company	

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Appendix A: Regulated Electric and Gas Utilities Methodology Factor Grid

Factor 1: Regulatory Framework		Sub-Factor Weighting			
Weighting: 25%	Aaa	Aa	A	Baa	B
Regulatory framework is fully developed, has a long-track record of being predictable and stable, and is highly supportive of utilities. Utility regulatory body is a highly rated sovereign or strong independent regulator with unquestioned authority over utility regulation that is national in scope.	Regulatory framework is fully developed, has been mostly predictable and stable in recent years, and is mostly supportive of utilities. Utility regulatory body is a sovereign, provincial, or agency, provincial, or independent regulator with authority over most utility regulation that is national in scope.	Regulatory framework is fully developed, has above average predictability and reliability, although is sometimes less supportive of utilities. Utility regulatory body may be a state commission or national, state, provincial or independent regulator.	Regulatory framework is a) well-developed, with evidence of some inconsistency or unpredictability in the way framework has been applied, or framework is new and untested, but based on well-developed and established precedents, or b) jurisdiction has history of independent and transparent regulation in other sectors. Regulatory environment may sometimes be challenging and politically charged.	Regulatory framework is developed, but there is a high degree of inconsistency or unpredictability in the way the framework has been applied. Regulatory environment is consistently challenging and politically charged. There has been a history of difficult or less supportive regulatory decisions, or regulatory authority has been or may be challenged or eroded by political or legislative action.	Regulatory framework is less developed, is unclear, is undergoing substantial change or has a history of being unpredictable or adverse to utilities. Utility regulatory body lacks a consistent track record or appears unsupportive, uncertain, or highly unpredictable. May be high risk of nationalization or other significant government intervention in utility operations or markets.

Factor 2: Ability to Recover Costs and Earn Returns		Sub-Factor Weighting			
Weighting: 25%	Aaa	Aa	A	Baa	B
Rate/tariff formula allows unquestioned full and timely cost recovery, with statutory provisions in place to preclude any possibility of challenges to rate increases or cost recovery mechanisms.	Rate/tariff formula generally allows full and timely cost recovery. Fair return on all investments. Minimal challenges by regulators to companies' cost assumptions; consistent track record of meeting efficiency tests.	Rate/tariff reviews and cost recovery outcomes are fairly predictable (with automatic fuel and purchased power recovery provisions in place where applicable), with a generally fair return on investments. Limited instances of regulatory challenges; although efficiency tests may be more challenging; limited delays to rate or tariff increases or cost recovery.	Rate/tariff reviews and cost recovery outcomes are usually predictable, although application of tariff formula may be relatively unclear or untested. Potentially greater tendency for regulatory intervention, or greater disallowance (e.g. challenging efficiency assumptions) or delaying of some costs (even where automatic fuel and purchased power recovery provisions are applicable).	Rate/tariff reviews and cost recovery outcomes are inconsistent, with some history of unfavorable regulatory decisions or unwillingness by regulators to make timely rate changes to address market volatility or higher fuel or purchased power costs. AND/OR Tariff formula may not take into account all cost components; investment are not clearly or fairly remunerated.	Difficult or highly uncertain rate and cost recovery outcomes. Regulators may engage in second-guessing of spending decisions or deny rate increases or cost recovery needed by utilities to fund ongoing operations, or high likelihood of politically motivated interference in the rate/tariff review process. AND/OR Tariff formula may not cover return on investments, only cash operating costs may be remunerated.

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Factor 3: Diversification

Weighting: 10%		Sub-Factor Weighting								
		Aaa	Aa	A	Baa	B	5% *			
Market Position	A high degree of multinational/regional diversification in terms of market and/or regulatory regime.	For LDCs, extremely low reliance on industrial customers and/or exceptionally large residential and commercial customer base and well above average growth.	For LDCs, very low reliance on industrial customers and/or very large residential and commercial customer base with very high growth.	Material operations in more than three nations or geographic regions providing diversification of market and/or regulatory regime.	Material operations in two or three states, nations, or geographic regions and exhibits some diversification of market and/or regulatory regime.	For LDCs, low reliance on industrial customers and/or high residential and commercial customer base with high growth.	Operates in a single state, nation, or economic region with low volatility with some concentration of market and/or regulatory regime.	Operates in a limited market area with material concentration in market and/or regulatory regime.	Operates in a single market which may be an emerging market or riskier environment, with high concentration risk.	5%
	Generation and Fuel Diversity	A high degree of diversification in terms of generation and/or fuel source, well insulated from commodity price changes, no generation concentration, or 0-20% of generation from carbon fuels.	Some diversification in terms of generation and/or fuel source, affected only minimally by commodity price changes, little generation concentration, or 20-40% of generation from carbon fuels.	Some diversification in one particular type of generation or fuel source, although mostly diversified, modest exposure to commodity price changes, or 40-55% of generation from carbon fuels.	May have some concentration in one generation or fuel source, limited diversification, moderate exposure to commodity prices, or 55-70% of generation from carbon fuels.	Some reliance on a single type of generation or fuel source, high diversification, moderate exposure to commodity price changes, or 70-85% of generation from carbon fuels.	Operates with little diversification in terms of generation and/or fuel source, high exposure to commodity price changes, or 70-85% of generation from carbon fuels.	High concentration in a single type of generation or highly reliant on a single fuel source, little diversification, may be exposed to commodity price shocks, or 85-100% of generation from carbon fuels.	5% **	

*10% weight for issuers that lack generation **0% weight for issuers that lack generation

Rating Methodology

Regulated Electric and Gas Utilities

Factor 4: Financial Strength, Liquidity and Key Financial Metrics

Weighting: 40%

	Aaa	Aa	A	Baa	Ba	B	Sub-Factor Weighting
Liquidity	Financially robust under all scenarios with no need for external funding, unquestioned access to the capital markets, and excellent liquidity.	Financially robust under virtually all scenarios with little to no need for external funding, superior access to the capital markets, and very strong liquidity.	Financially strong under most scenarios with some reliance on external funding, solid access to the capital markets, and strong liquidity.	Some reliance on external funding and liquidity is more likely to be affected by external events, good access to the capital markets, and adequate liquidity under most scenarios.	Weak liquidity with more susceptibility to external shocks or unexpected events. Significant reliance on debt financing. Bank financing may be secured and there may be limited headroom under covenants.	Very weak liquidity with limited ability to withstand external shocks or unexpected events. Must use debt to finance investments. Bank financing is normally secured and there may be a high likelihood of breaching one or more covenants.	10%
CFO pre-WC + Interest/Interest	> 8.0x	6.0x - 8.0x	4.5x - 6.0x	2.7x - 4.5x	1.5x - 2.7x	< 1.5x	7.5%
CFO pre-WC/Debt	> 40%	30% - 40%	22% - 30%	13% - 22%	5% - 13%	< 5%	7.5%
CFO pre-WC - Dividends/Debt	> 35%	25% - 35%	17% - 25%	9% - 17%	0% - 9%	< 0%	7.5%
Debt/Capitalization Debt/RAV	< 25% < 30%	25% - 35% 30% - 45%	35% - 45% 45% - 60%	45% - 55% 60% - 75%	55% - 65% 75% - 90%	> 65% > 90%	7.5% 7.5%

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Appendix B: Methodology Grid-Indicated Ratings

Sub-Factor Weights	Factor 1: Regulatory Framework		Factor 2: Returns and Cost Recovery		Factor 3: Diversification			Factor 4: Financial Strength			3 Year Average CFO pre-W/C + Dividends / Debt / Cap	3 Year Average CFO pre-W/C + Dividends / Debt / Cap	3 Year Average CFO pre-W/C + Dividends / Debt / Cap
	25%	25%	Rate Adjustment and Cost Recovery Mechanisms	Indicated Factor 3 Rating	Market Position	Fuel or Generation Diversification	Indicated Factor 4 Rating	Liquidity	7.5%	7.5%			
Kyushu Electric Power Company, Incorporated	Aa2	Aa3	Aaa	Aa	A	Aaa	A	Aa	Aa	Ba	Ba	Ba	Baa
Tokyo Electric Power Company, Incorporated	Aa2	A1	Aaa	Aa	A	Aaa	A	Aa	A	Ba	Ba	Ba	Ba
Easti Energia AS	A1/[8]	A3	Baa	B	B	B	Aa	Baa	Baa	Ba	Ba	Ba	Ba
Florida Power & Light Company	A1	A1	A	Baa	Baa	Baa	Aa	A	Aa	Aa	Aa	Aa	A
Korea Electric Power Corporation	A2/[6]	Baa1	Baa	Baa	Baa	A	A	Baa	Aa	A	A	A	A
CLP Holdings Limited	A2	A2	A	A	A	A	A	Aa	Aa	A	A	A	A
Northern Illinois Gas Company	A2	Baa1	Baa	A	A	N/A	Baa	Baa	A	A	A	Baa	Baa
Oklahoma Gas and Electric Company	A2	A3	Baa	Baa	Baa	Baa	A	A	A	A	A	A	A
Wisconsin Power and Light Company	A2	A3	A	Baa	Baa	Baa	A	Baa	A	A	A	Baa	A
Consolidated Edison Company of New York	A3	Baa1	Baa	Baa	Baa	N/A	Baa	Baa	Baa	Baa	Ba	Ba	A
PECO Energy Company	A3	Baa1	Baa	Baa	Baa	N/A	A	A	A	A	A	Baa	Baa
Piedmont Natural Gas Company, Inc.	A3	A3	A	A	A	N/A	Baa	Baa	A	Baa	Baa	Baa	Baa
Progress Energy Carolinas, Inc.	A3	A2	A	Baa	Baa	A	A	Baa	A	A	A	A	Baa
Southern California Edison Company	A3	Baa1	Baa	Baa	Baa	A	A	A	A	A	A	A	Baa
The Southern Company	A3	A3	A	Baa	A	Ba	Baa	A	A	Baa	Baa	Baa	Baa
PG&E Corporation	Baa1	Baa1	Baa	A	Baa	Baa	Baa	Baa	A	Baa	Baa	Baa	Baa
Xcel Energy Inc.	Baa1	Baa1	Baa	A	A	A	Baa	Baa	Baa	Baa	Baa	Baa	Baa
American Electric Power Company, Inc.	Baa2	Baa2	Baa	Baa	A	Ba	Baa	Baa	Baa	Baa	Baa	Baa	Ba

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Sub-Factor Weights	Factor 1: Regulatory Framework		Factor 2: Returns and Cost Recovery		Factor 3: Diversification		Factor 4: Financial Strength		3 Year Average CFO pre-WC + Interest	3 Year Average CFO pre-WC / Debt	3 Year Average W/C - Dividends / Debt	3 Year Average Debt / Cap of Debt/RAV
	25%	25%	25%	Rate Adjustment and Cost Recovery Mechanisms	5%	5%	10%	7.5%				
Current Rating/BCA	Indicated Rating	Regulatory Supportiveness	Rate Adjustment and Cost Recovery Mechanisms	Indicated Factor 3 Rating	Market Position	Fuel or Generation Diversification	Indicated Factor 4 Rating	Liquidity	3 Year Average CFO pre-WC + Interest	3 Year Average CFO pre-WC / Debt	3 Year Average W/C - Dividends / Debt	3 Year Average Debt / Cap of Debt/RAV
Baa2	Baa2	Ba	Baa	Baa	Baa	Baa	Baa	Baa	A	Baa	Baa	Baa
Baa2	Baa2	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Ba
Baa2	Baa1	Baa	A	A	A	A	Baa	Baa	Baa	Baa	Ba	Baa
Baa2	A3	Baa	A	Baa	A	Baa	A	Baa	A	A	Baa	A
Baa2	Baa1	A	A	Ba	Ba	Ba	Ba	Baa	Baa	Ba	Baa	B
Baa2	Baa3	Ba	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Baa
Baa2[13]	Ba1	Ba	Ba	Ba	Ba	Ba	Baa	Ba	Ba	A	A	A
Baa2	Baa1	Baa	A	Ba	Baa	Ba	Baa	Baa	A	A	Baa	Baa
Baa3	Baa2	Ba	Ba	Ba	Ba	N/A	A	Baa				Ba
Baa3	Baa2	Baa	Baa	Baa	A	Baa	Baa	Baa	Baa	Baa	Baa	Ba
Baa3	Baa2	Baa	Baa	Ba	Baa	Ba	Baa	Baa	Baa	Baa	Baa	Baa
Ba1	Baa3	Ba	Ba	Baa	Baa	Baa	Baa	Ba	Baa	Baa	Baa	Baa

Positive Outlier:
Negative Outlier:

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Appendix C: Observations and Outliers for Grid Mapping**Results of Mapping Factor 1****Factor 1: Regulatory Framework**

Factor Weight	Current Rating /BCA	25% Regulatory Supportiveness
Kyushu Electric Power Company, Incorporated	Aa2	Aaa
Tokyo Electric Power Company, Incorporated	Aa2	Aaa
Eesti Energia AS	A1/[8]	Baa
Florida Power & Light Company	A1	A
Korea Electric Power Corporation	A2/[6]	Baa
CLP Holdings Limited	A2	A
Northern Illinois Gas Company	A2	Baa
Oklahoma Gas and Electric Company	A2	Baa
Wisconsin Power and Light Company	A2	A
Consolidated Edison Company of New York	A3	Baa
PECO Energy Company	A3	Baa
Piedmont Natural Gas Company, Inc.	A3	A
Progress Energy Carolinas, Inc.	A3	A
Southern California Edison Company	A3	Baa
The Southern Company	A3	A
PG&E Corporation	Baa1	Baa
Xcel Energy Inc.	Baa1	Baa
American Electric Power Company, Inc.	Baa2	Baa
Arizona Public Service Company	Baa2	Ba
Consumers Energy Company	Baa2	Baa
Dominion Resources, Inc.	Baa2	Baa
Duke Energy Corporation	Baa2	Baa
Emera Incorporated	Baa2	A
The Empire District Electric Company	Baa2	Ba
Eskom Holdings Ltd	Baa2/[13]	Ba
Indianapolis Power & Light Company	Baa2	Baa
Cemig Distribuição S.A.	Baa3	Ba
FirstEnergy Corp.	Baa3	Baa
Westar Energy, Inc.	Baa3	Baa
EDP - Energias do Brasil S.A.	Ba1	Ba

Observations and Outliers

As a utility's regulatory framework is one of the most important drivers of ratings, there are no outliers for this factor among the 30 issuers highlighted for this methodology.

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Results of Mapping Factor 2**Factor 2: Ability to Recover Costs and Earn Returns**

Factor Weight	Current Rating/BCA	Rate Adjustment and Cost Recovery Mechanisms
		25%
Kyushu Electric Power Company, Incorporated	Aa2	Aa
Tokyo Electric Power Company, Incorporated	Aa2	Aa
Eesti Energia AS	A1/[8]	Baa
Florida Power & Light Company	A1	A
Korea Electric Power Corporation	A2/[6]	Baa
CLP Holdings Limited	A2	A
Northern Illinois Gas Company	A2	Baa
Oklahoma Gas and Electric Company	A2	A
Wisconsin Power and Light Company	A2	A
Consolidated Edison Company of New York	A3	A
PECO Energy Company	A3	Baa
Piedmont Natural Gas Company, Inc.	A3	A
Progress Energy Carolinas, Inc.	A3	A
Southern California Edison Company	A3	Baa
The Southern Company	A3	A
PG&E Corporation	Baa1	Baa
Xcel Energy Inc.	Baa1	A
American Electric Power Company, Inc.	Baa2	Baa
Arizona Public Service Company	Baa2	Baa
Consumers Energy Company	Baa2	Baa
Dominion Resources, Inc.	Baa2	A
Duke Energy Corporation	Baa2	A
Emera Incorporated	Baa2	A
The Empire District Electric Company	Baa2	Baa
Eskom Holdings Ltd	Baa2/[13]	Ba
Indianapolis Power & Light Company	Baa2	A
Cemig Distribuição S.A.	Baa3	Ba
FirstEnergy Corp.	Baa3	Baa
Westar Energy, Inc.	Baa3	Baa
EDP - Energias do Brasil S.A.	Ba1	Ba

Observations and Outliers

Like Factor 1, Regulatory Framework, the ability to recover costs and earn returns is also an important ratings driver for regulated utilities, and it is not surprising that there are no outliers among the 30 issuers highlighted. For this factor, most of the issuers score exactly at their current rating levels, with the remainder scoring within one notch of their actual rating.

Regulated Electric and Gas Utilities

Results of Mapping Factor 3**Factor 3: Diversification**

Sub-Factor Weights	5% * 5% **			
	Current Rating/BCA	Indicated Factor 3 Rating	Market Position	Generation and Fuel Diversification
Kyushu Electric Power Company, Incorporated	Aa2	Aa	A	Aaa
Tokyo Electric Power Company, Incorporated	Aa2	Aa	A	Aaa
Eesti Energia AS	A1/[8]	B	B	B
Florida Power & Light Company	A1	Baa	Baa	Baa
Korea Electric Power Corporation	A2/[6]	Baa	Baa	A
CLP Holdings Limited	A2	A	A	A
Northern Illinois Gas Company	A2	A	A	N/A
Oklahoma Gas and Electric Company	A2	Baa	Baa	Baa
Wisconsin Power and Light Company	A2	Baa	Baa	Baa
Consolidated Edison Company of New York	A3	Baa	Baa	N/A
PECO Energy Company	A3	Baa	Baa	N/A
Piedmont Natural Gas Company, Inc.	A3	A	A	N/A
Progress Energy Carolinas, Inc.	A3	Baa	Baa	A
Southern California Edison Company	A3	Baa	Baa	A
The Southern Company	A3	Baa	A	Ba
PG&E Corporation	Baa1	A	Baa	
Xcel Energy Inc.	Baa1	A	A	A
American Electric Power Company, Inc.	Baa2	Baa	A	Ba
Arizona Public Service Company	Baa2	Baa	Baa	Baa
Consumers Energy Company	Baa2	Baa	Baa	Baa
Dominion Resources, Inc.	Baa2	A	A	A
Duke Energy Corporation	Baa2	Baa	A	Baa
Emera Incorporated	Baa2	Ba	Ba	Ba
The Empire District Electric Company	Baa2	Baa	Baa	Baa
Eskom Holdings Ltd	Baa2/[13]	B	Ba	B
Indianapolis Power & Light Company	Baa2	Ba	Baa	Ba
Cemig Distribuição S.A.	Baa3	Ba	Ba	N/A
FirstEnergy Corp.	Baa3	Baa	A	Baa
Westar Energy, Inc.	Baa3	Ba	Baa	Ba
EDP - Energias do Brasil S.A.	Ba1	Baa	Baa	Baa

Observations and Outliers

Of the 30 issuers highlighted, there are three outliers, including PG&E Corporation as a positive outlier, due to their high degree of generation diversification and the lack of coal in their generation mix, and both Eesti Energia AS and The Southern Company as negative outliers. As an Estonian vertically integrated dominant electric utility, Eesti Energia is exposed to considerably high concentration risk as it operates in one of the smallest CEE emerging markets. The concentration risk is further worsened by the company's high reliance on one fuel source as its generation is fully based on internationally rare oil shale. Furthermore, as the oil shale generation is relatively CO2 intensive, Eesti Energia is further exposed to the development of CO2 allowance prices. The Southern Company is one of the largest coal generating utility systems in the U.S., with a high percentage of its generation from carbon fuels.

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Results of Mapping Factor 4

Factor 4: Financial Strength, Liquidity and Key Financial Metrics

Sub-Factor Weights	10%	7.5%	7.5%	7.5%	7.5%		
	Current Rating/BCA	Indicated Factor 4 Rating	Liquidity	3 Year Average CFO pre-WC + Interest/Interest	3 Year Average CFO pre-WC / Debt	3 Year Average CFO pre-WC / Debt	3 Year Average Debt / Cap or Debt/RAV
Kyushu Electric Power Company, Incorporated	Aa2	A	Aa	Aa	Ba	Ba	Baa*
Tokyo Electric Power Company, Incorporated	Aa2	Baa	Aa	A	Ba	Ba	Ba*
Eesti Energia AS	A1/[8]		Baa				
Florida Power & Light Company	A1	Aa	A	Aa	Aa	Aa	A
Korea Electric Power Corporation	A2/[6]	A	Baa	Aa	A	A	A
CLP Holdings Limited	A2	A	A	Aa	A	Baa	A
Northern Illinois Gas Company	A2	Baa	Baa	A	A	Baa	Baa
Oklahoma Gas and Electric Company	A2	A	A	A	A	A	A
Wisconsin Power and Light Company	A2	A	Baa	A	A	Baa	A
Consolidated Edison Company of New York	A3	Baa	A	Baa	Baa	Ba	A
PECO Energy Company	A3	A	A	A	A	Baa	Baa
Piedmont Natural Gas Company, Inc.	A3	Baa	Baa	A	Baa	Baa	Baa
Progress Energy Carolinas, Inc.	A3	A	Baa	A	A	A	Baa
Southern California Edison Company	A3	A	A	A	A	A	Baa
The Southern Company	A3	Baa	A	A	Baa	Baa	Baa
PG&E Corporation	Baa1	Baa	Baa	A	A	A	Baa
Xcel Energy Inc.	Baa1	Baa	Baa	Baa	Baa	Baa	Baa
American Electric Power Company, Inc.	Baa2	Baa	Baa	Baa	Baa	Baa	Ba
Arizona Public Service Company	Baa2	Baa	Baa	A	Baa	Baa	Baa
Consumers Energy Company	Baa2	Baa	Baa	Baa	Baa	Baa	Ba
Dominion Resources, Inc.	Baa2	Baa	Baa	Baa	Baa	Ba	Baa
Duke Energy Corporation	Baa2	A	Baa	A	A	Baa	A
Emera Incorporated	Baa2	Ba	Baa	Baa	Ba	Baa	B
The Empire District Electric Company	Baa2	Baa	Baa	Baa	Baa	Baa	Baa
Eskom Holdings Ltd	Baa2/[13]	Baa	Ba	Ba			
Indianapolis Power & Light Company	Baa2	Baa	Baa	A	A	Baa	Baa
Cemig Distribuição S.A.	Baa3	A	Baa				Ba
FirstEnergy Corp.	Baa3	Baa	Baa	Baa	Baa	Baa	Ba
Westar Energy, Inc.	Baa3	Baa	Baa	Baa	Baa	Baa	Baa
EDP - Energias do Brasil S.A.	Ba1	Baa	Ba	Baa			

*Debt/RAV

Positive Outlier

Negative Outlier

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Observations and Outliers

This factor takes into account historic financial statements. Historic results help us to understand the pattern of a utility's financial and operating performance and how a utility compares to its peers. While Moody's rating committees and the rating process use both historical and projected financial results, this document makes use only of historic data, and does so solely for illustrative purposes.

While the vast majority of utilities' key financial metrics map fairly closely to their ratings, there are several significant outliers, which generally fall into two broad groups. The first group is composed of negative outliers and include several utilities located in stable and supportive regulatory environments and are characterized by very low business risk. In these cases, the utilities may have lower financial ratios and higher leverage than most peer companies on a global basis, but still maintain higher overall ratings. In short, the certainty provided by regulatory stability and low business risk offsets any risks that may result from lower financial ratios. Examples of such negative outliers on the financial strength factor include most of the major Japanese utilities, including Tokyo Electric Power and Kyushu Electric Power.

The second group of outliers is composed of positive outliers, whereby several financial ratios are stronger than the overall Moody's rating. These include several utilities in Latin America, such as Cemig Distribuicao, EDP-Energias do Brasil, and European Eesti Energia, which exhibit strong financial coverage ratios and low debt levels, but where ratings are constrained by a more difficult regulatory or business environment or a sovereign rating ceiling.

Regulated Electric and Gas Utilities

Appendix D: Definition of Ratios**Cash Flow Interest Coverage**

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

CFO pre-WC / 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)

CFO pre-WC - Dividends / 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)

Debt / Capitalization or Regulated Asset Value

(Total debt + operating lease adjustment + under-funded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items) / (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) or RAV

Regulated Electric and Gas Utilities

Appendix E: Industry Overview

The electric and gas utility industry consists of companies that are engaged in the generation, transmission, and distribution of electricity and/or natural gas. While many utilities remain vertically integrated with operations in all three segments, others have functionally or legally unbundled these functions due to legislatively mandated market restructuring or other deregulation initiatives and may be engaged in just one or two of these activities.

The **generation** of electricity is the first step in the process of producing and delivering electricity to end use customers and typically the most capital intensive, with the largest portion of the industry's assets consisting of generating plants and related hard assets. Electricity is generated from a variety of fuel sources, including coal, natural gas, or oil; nuclear energy; and renewable sources such as hydro, wind, solar, geothermal, wood, and waste.

Transmission is the high voltage transfer of electricity over long distances from its source, usually the location of a generating plant, to substations closer to end use customers in population or industrial centers. Although many utilities own and operate their own transmission systems, there are also several independent transmission companies included in this methodology.

The **distribution** of electricity is the process whereby voltage is reduced and delivered from a high voltage transmission system through smaller wires to the end-users, which consist of industrial, commercial, government, or retail customers of the utility. Most of the utilities covered by this methodology are engaged to some degree in the distribution of electricity through "poles and wires" to their end customers. The distribution of natural gas entails the transport of gas from delivery points along major pipelines to customers in their service territory through distribution pipes.

Regulation Plays a Major Role in the Industry

Because of the essential nature of the utility's end products (electricity and gas), the public policy implications associated with their provision, the demands for high levels of reliability in their delivery, the monopoly status of most service territories, and the high capital costs associated with its infrastructure, the utility industry is generally subject to a high degree of government regulation and oversight. This regulation can take many forms and may include setting or approving the rates or other cost recovery mechanisms that utilities charge for their services (revenue), determining what costs can be recovered through base rates, authorizing returns that utilities earn on their investments, defining service territories, mandating the level and reliability of electricity and gas service that must be provided and enforcing safety standards. From a credit standpoint, the regulators' ability to set and control rates and returns is perhaps the most important regulatory consideration in determining a rating.

In the U.S., the most important utility regulator for most companies is the individual state agency generally known as the Public Utility Commission or the Public Service Commission. The commissions are comprised of elected or appointed officials in each state who determine, among other things, whether utility expenditures are reasonable and/or prudent and how they should be passed on to consumers through their utility rates. While some states have legislatively mandated certain market restructuring or deregulation initiatives with regard to the generation segment of their electricity markets, the majority of states remain fully regulated, and some states that had deregulated are in the process of "re-regulating" their electricity markets.

The key federal agency governing utilities in the U.S. is the Federal Energy Regulatory Commission (FERC), an independent agency that regulates, among other things, the interstate transmission of electricity and natural gas. The FERC's responsibilities include the approval of rates for the wholesale sale and transmission of electricity on an interstate basis by utilities, power marketers, power pools, power exchanges, and independent system operators. The Energy Policy Act of 2005 increased the FERC's regulatory authority in a wide range of areas including mergers and acquisitions, transmission siting, market practices, price transparency, and regional transmission organizations.

Regulated Electric and Gas Utilities

In Europe, following the implementation of specific policies relating to the liberalization of energy supply within the European Union (EU), the electric utility sector has been evolving toward a model targeting complete separation between network activities, regulated in light of their monopoly nature, and supply and production of energy, fully liberalized and hence unregulated. As a result of this process, most Western European utilities currently operate either as fully regulated entities in the networks segment, or largely unregulated integrated companies (albeit some may still maintain some regulated network activity), and are therefore excluded from the scope of this methodology. Nevertheless, there are countries in Europe where regulatory evolution and transition to competition remain at an earlier stage (Central and Eastern European countries and the Baltic states in particular) and/or are characterized by the remoteness and isolation of their systems (the islands in the Azores and Madeira regions for example). In these countries, Governments and/or Regulators maintain greater influence on the bulk of the utilities' revenues, thus supporting their inclusion in this methodology.

In Japan, regulation has been an important positive factor supporting utility credit quality. Japan's regulator makes the maintenance of supply its primary policy objective, followed in priority by environmental protection and finally, allowing market conditions to work. This approach preserves the utilities' integrated operations and makes them responsible for final supply to users in the liberalized market. The Japanese government is gradually deregulating the utility industry and expanding the liberalized market. However, the pace of deregulation has been moderate so that the regulator can monitor the risks and the effects on the power companies, especially in the context of generation supply security.

In Australia, stable and predictable regulatory regimes continue to underpin the investment-grade characteristics of the sector. So far, regulators – which operate independently from the governments – have not adopted an aggressive stance to revenues and returns as they seek a balance between: appropriate returns for utilities; ongoing incentives for network investments; and appropriate prices for consumers. The supportiveness of the regimes will become increasingly important over the medium term as the sector undertakes investments to expand network capacity and replace ageing assets to meet rising demand.

In Asia Pacific (ex-Japan), regulation of electric utilities is overseen by government regulatory bodies in their respective countries. As such, the stability and regulatory framework can vary to a large extent by country with a few utilizing automatic cost pass through mechanisms while the majority operate with ad hoc tariff adjustments. However, power security remains a key policy objective and regulators continue to seek to ensure stability in regulatory and operating environments. Such regulatory environments are critical to attracting investments for both privatizations and for funding expanding electricity projects. Reform of the power industry in Asia remains slow paced and competition is well contained. Regulators have shown that they will reform in a prudent manner and allow tariff adjustment to minimize any material negative impact on the credit profiles of their power utilities. Such a supportive approach enhances stability and provides a stable regulatory regime which in turn remains a key driver in supporting the cash flows of Asia Pacific (ex-Japan) utilities.

In Canada, regulation of electric and gas utilities is overseen by independent, quasi-judicial provincial or territorial regulatory bodies. Accordingly, the transparency and stability of regulation and the timeliness of regulatory decisions can vary by jurisdiction. However, generally the regulatory frameworks in each jurisdiction are well established and there is a high expectation of timely recovery of cost and investments. Furthermore, Moody's considers the overall business environment in Canada to be relatively more supportive and less litigious than that of the U.S. Moody's views the supportiveness of the Canadian business and regulatory environments to be positive for regulated utility credit quality and believes that these factors, to some degree, offset the relatively lower ROEs and higher deemed debt components typically allowed by Canadian regulatory bodies for rate-making purposes. As a result of the relatively low ROEs and higher deemed debt levels that are generally characteristic of Canadian utilities, for a given rating category, these entities often have weaker credit metrics than their international peers.

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In Latin America, there is a perceived lower level of regulatory supportiveness than in other regions. In Argentina, although the generation industry is deregulated, the government continues to intervene in the process of setting prices and tariffs. In addition, collections from sales to the spot market have only been partial and have depended on the government's discretion. Moody's views the current regulatory framework as a relatively high risk factor given the government's interference, the unclear regulations, the lack of support for the companies' profitability, and the lack of incentives for much needed long-term investment. Brazil's power generation companies could also be affected by unfavorable regulatory decisions, since about 75% of its electricity currently goes to the regulated market, but Moody's last year noted improvements in Brazil's regulatory environment, which led to several issuer upgrades. Brazil's regulatory model provides a more supportive environment for acceptable rates of return since the current rules for electric utilities are more transparent and technically driven. Nonetheless, there is a lower assurance of timely recovery of costs and investments in Brazil since the new framework has not yet experienced the stress of high inflation, exchange rate devaluation or electricity rationing. Recent distribution tariff review reductions have typically been in the high-single-digit range, which is considered modest, particularly compared to Moody's rated issuers in El Salvador (14% reduction) and Guatemala (45% reduction) both of which led to downgrades last year. The regulatory framework in Chile, in Moody's opinion, comes closest to the United States in terms of regulatory supportiveness.

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Appendix F: Key Rating Issues Over the Intermediate Term**Global Climate Change and Environmental Awareness**

Electric and gas utilities will continue to be affected by growing concerns over global climate change and greenhouse gas emissions, which are particularly important in the electricity generation segment which continues to rely on a large number of coal and natural gas fired power plants. There have been significant increases in environmental expenditure estimates among utilities with significant coal fired generation in recent years as policymakers have mandated pollution control measures and emissions limitations in response to public concerns over carbon. These expenditures are likely to continue to increase with the imposition of new and sometimes uncertain requirements with respect to carbon emissions. Utilities may have to implement substantial additional reductions in power plant emissions and could experience progressively higher capital expenditures over the next decade. In the U.S., the planned construction of several new coal plants has been cancelled as a result of opposition from regulators, political leaders, and the public or because cheaper alternatives appeared more compelling due to higher coal plant construction costs.

Large Capital Expenditures and Rising Costs for New Generation and Transmission

While the global recession may have reduced electric demand in certain regions in the short-term, longer-term worldwide demand for electricity is expected to continue to grow and many utilities will incur substantial capital expenditures for new generation, as well as for upgrades and expansions to transmission systems. In the U.S., the Edison Electric Institute projects annual capacity additions among investor-owned utilities to increase to over 15,000 megawatts (MW) in 2009 compared with less than 6,000 MW in 2006. Some of the new plants announced include large, highly capital intensive nuclear plants, which have not been built in the U.S. in many years. In Indonesia, the Fast Track program calls for the addition of 9,000 MW of coal-fired power plants while India plans to build eight ultra-mega power projects (each under 4,000 MW). Similar large nuclear plants are being constructed worldwide in countries as diverse as Bulgaria, China, India, Russia, South Korea, Taiwan and Ukraine. Because of this construction boom, international demand for certain construction materials, plant components and skilled labor has driven up the cost of new nuclear. More recently, the global economic slowdown may relieve some of this cost pressure.

Political and Regulatory Risk

As the utility industry faces higher operating costs, rising environmental compliance expenditures, large capital expenditures for new generation, as well as fuel and commodity price risks, the need for rate relief and other regulatory support will continue to be a key rating factor. In the U.S., political intervention in the regulatory process following particularly large rate increase requests increased risk and negatively affected the credit ratings of utilities in Illinois and Maryland in recent years. In Europe, rising electricity prices two years ago resulted in widespread criticism of utilities in several countries, increasing regulatory and political risk for some of them. In Australia, the transition from state based regulation to a national regulatory framework could pose a moderate level of uncertainty to current regulatory thinking over the longer term. In Asia Pacific (ex-Japan) and Latin America, the governments face political pressure regarding tariff adjustments given their need to balance socio-economic targets and inflationary concerns against the objective of ensuring reliable electricity supply over the long term.

Economic and Financial Market Conditions

Although electric and gas utilities are somewhat resistant (although not immune) to unsettled economic and financial market conditions due partly to the essential nature of the service provided, a protracted or severe recession could negatively affect credit profiles over the intermediate term in several ways. Falling demand for electricity or natural gas could negatively impact margins and debt service protection measures. Poor economic conditions could make it more difficult for regulators to approve needed rate increases or provide timely cost recovery for utilities, resulting in higher cost deferrals and longer regulatory lag. Finally,

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constrained capital market conditions could severely limit the availability of credit necessary to finance needed capital expenditures, or make such financing plans more expensive.

Appendix G: Regional and Other Considerations

Notching Considerations - Structural Subordination and Holding Company Ratings

Utility corporate structures often include multiple legal entities within a single consolidated organization under an unregulated parent holding company. The holding company typically has one or more regulated operating subsidiaries and may have one or more unregulated subsidiaries as well. Most utility families issue debt at several of these legal entities within the organizational family including the parent holding company and the utility subsidiaries. In such cases, our approach is to assess each issuer on a standalone basis as well as to evaluate the creditworthiness of the consolidated entity. We also consider the interdependent relationships that may exist among affiliates and the degree to which a management team operates its utility subsidiaries as a system. We then assess the degree of legal and regulatory insulation that exists between the generally lower-risk regulated entities and the generally higher-risk unregulated entities.

The degree of notching (or rating differential) between entities in a single family of companies depends on the degree of insulation that exists between the regulated and unregulated entities, as well as the amount of debt at the holding company in comparison to the consolidated entity. If there is minimal insulation or ring-fencing between the parent and subsidiary and little to no debt at the parent, there is typically a one notch differential between the two to reflect structural subordination of the parent company debt compared to the operating subsidiary debt. If there is substantial insulation between the two and/or debt at the parent company is a material percentage of the overall debt, there could be two or more notches between the ratings of the parent and the subsidiary.

U.S. Securitization

Since the late 1990s, legislatively approved stranded cost and other regulatory asset securitization has become an increasingly utilized financing technique among some investor-owned electric utilities. In its simplest form, a stranded cost securitization isolates and dedicates a stream of cash flow into a separate special purpose entity (SPE). The SPE uses that stream of revenue and cash flow to provide annual debt service for the securitized debt instrument. Securitizations were originally done to reimburse utilities for stranded costs following deregulation, which was primarily related to the actual lower market values of the legacy generation compared to its book value. More recently, securitizations have been done to reimburse utilities for storm restoration costs following two active hurricane seasons in the U.S. in 2004 and 2005, with additional securitizations planned following an active 2008 hurricane season, as well as for environmental equipment. In 2007, Baltimore Gas & Electric used securitization to fund supply cost deferrals. Securitization could also be used to help fund the next generation of nuclear plants to be built in the U.S.

Although it often addresses a major credit overhang and provides an immediate source of cash, Moody's treats securitization debt of utilities as being on-credit debt. In calculating balance sheet leverage, Moody's treats the securitization as being fully recourse to the utility as accounting guidelines require the debt to appear on the utility's balance sheet. In looking at cash flow coverages, Moody's analysis focuses on ratios that include the securitized debt in the company's total debt as being the most consistent with the analysis of comparable companies. Securitizations also entail transition or other charges on ratepayer bills that may limit a utility's flexibility to raise rates for other reasons going forward. While our standard published credit ratios include the securitization debt, we also look at the ratios without the securitization debt and cash flow in our analysis, to distinguish this debt and ensure that the benefits of securitization are not ignored.

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Strong levels of government ownership in Asia Pacific (ex-Japan) provide rating uplift

Strong levels of government ownership dominate Asia Pacific (ex-Japan) power utilities and remain one of their key rating drivers. The current majority state ownership levels are expected to remain largely unchanged for the near to medium term, thereby providing rating uplift to a majority of the government-owned Asia Pacific (ex-Japan) utilities under the Joint Default Analysis methodology.

Appendix H: Treatment of Power Purchase Agreements ("PPA's")

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.

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 typically covers a portion of the IPP's fixed costs in relation to the power available to the utility. These fixed payments usually help to cover debt service and are made irrespective of whether the utility requires the IPP to generate and deliver power. 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 similar 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.⁴

Factors determining the treatment of PPAs

Because PPAs have a wide variety of financial and regulatory characteristics, 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

⁴ When take-or-pay contracts, outsourcing agreements, PPAs and other rights to capacity are accounted for as leases under US GAAP or IFRS, they are treated by Moody's as such for analytical purposes.

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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 totaled 42.0% of its operating costs in FY2008. 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 power plants 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 debt, in the same way as other off-balance sheet items.⁵
- **Accounting:** From a financial reporting standpoint, very few PPA's have thus far resulted in IPP's being consolidated by the off taker. Similarly, very few PPA's are treated as lease obligations. Due to upcoming accounting rule changes⁶, however, coupled with many contracts being renegotiated and extended over the next several years, we expect to see an increasing number of projects being consolidated or PPA's accounted for as leases on utility financial statements. Many of the factors assessed in the accounting decision are the same as in our analysis, i.e. risk and control. However, our analysis also considers additional factors that the accountants may not, such as the ability to pass through costs. We will consider the rationale behind the accounting decision and compare it to our own analysis and may not necessarily come to the same conclusion as the accountants.

Each of these factors will be weighed by Moody's analysts and a decision will be 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 debt 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 debt obligations of the utility. In the event operating costs are consolidated, we will attempt to deconsolidate these costs from a utility's financial statements.
- **Annual Obligation x 6:** In some situations, the PPA obligation may be estimated by multiplying the annual payments by a factor of six (in most cases). This method is sometimes used in the capitalization of operating leases. 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.

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

⁶ SFAS 167 "Amendments to FASB Interpretation No. 46(r)" will be effective Q1 2010.

Regulated Electric and Gas Utilities

- **Net Present Value:** Where the analyst has sufficient information, Moody's may add the NPV of the stream of PPA payments to the debt 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 debt 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 effect of the PPA on the credit of the utility.

Moody's Related Research

Industry Outlooks:

- U.S. Regulated Electric Utilities, Six-Month Update, July 2009 (118776)
- U.S. Investor-Owned Electric Utility Sector, January 2009 (113690)
- EMEA Electric and Gas Utilities, November 2008 (112344)
- North American Natural Gas Transmission & Distribution, March 2009 (115150)

Rating Methodologies:

- Unregulated Utilities and Power Companies, August 2009 (118508)
- Regulated Electric and Gas Networks, August 2009 (118786)

Special Comments:

- Credit Roadmap for Energy Utilities and Power Companies in the Americas, March 2009 (115514)

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.

Regulated Electric and Gas Utilities

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Report Number: 118481

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Moody's Investors Service

McGill, James T(Z71171)

From: McGill, James T(Z71171)
Sent: Monday, August 17, 2009 3:11 PM
To: 'Moss, Mitchell'
Subject: Book1.xls

Attachments: Book1.xls

Mitchell,

I put this spreadsheet together to understand the methodology issued last week. I calculated an aggregate weighted factor score of 9.525. Wouldn't this indicate a Baa3 rating for APS rather than the Baa2 shown in the report?

Jim



Book1.xls (9 KB)

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Weight
Rating
Numerical Rating
Numerical Indicated Rating

Factor 1
Reg. Framework
25.0%
Ba
12
3

Factor 2
Returns and Cost Recovery
25.0%
Baa
9
2.25

Factor 3
Diversification
Mkt Post 5.0%
Baa 9
0.45
Fuel/Gen 5.0%
Baa 9
0.45

Factor 4
Fin. Strength
Liquidity Int. coverage 7.5%
Baa 9
0.9
FFO/debt 7.5%
A 6
0.45
FFO-div/debt 7.5%
Baa 9
0.675
debt/cap 7.5%
Baa 9
0.675
Total
9.525

McGill, James T(Z71171)

From: Moss, Mitchell [Mitchell.Moss@moodys.com]
Sent: Monday, August 17, 2009 3:25 PM
To: McGill, James T(Z71171)
Subject: RE: Book1.xls
Attachments: Methodology Revised 8-3-09 (Blank).xls

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Global Electric Utilities - Draft Mapping Grid

Sub-Factor Weighting				
25%	Aa	A	Baa	Ba
	<p>Regulatory framework is fully developed, has been mostly predictable and stable in recent years, and is mostly supportive of utilities. Utility regulatory body is a highly sovereign or strong provincial, or independent regulator with authority over utility that is national in scope.</p>	<p>Regulatory framework is fully developed, has above average predictability and reliability, although is sometimes less supportive of utilities. Utility regulatory body may be a state, provincial or national, state, provincial or independent regulator.</p>	<p>Regulatory framework is a) well-developed, with evidence of some inconsistency or unpredictability in the way the framework has been applied, but based on well-developed and established precedents, or b) jurisdiction has history of independent and transparent regulation in other sectors. Regulatory environment may sometimes be challenging and politically charged.</p>	<p>Regulatory framework is less developed, is unclear, is undergoing substantial change or has a history of being unpredictable or adverse to utilities. Utility regulatory body lacks a consistent track record or appears unsupportive, uncertain, or highly unpredictable. May be high risk of nationalization or other significant government intervention in utility operations or markets.</p>

Sub-Factor Weighting				
25%	Aaa	A	Baa	Ba
	<p>Rate/tariff formula generally allows full and timely cost recovery. Fair return on all investments. Minimal challenges by regulators to companies' cost assumptions; consistent track record of meeting efficiency tests.</p>	<p>Rate/tariff reviews and cost recovery outcomes are fairly predictable (with automatic fuel and purchased power recovery provisions in place where applicable), with a generally fair return on investments. Limited instances of regulatory challenges; although efficiency tests may be more challenging; limited delays to rate or tariff increases or cost recovery.</p>	<p>Rate/tariff reviews are usually predictable, although application of tariff formula may be relatively unclear or untested. Potentially greater tendency for regulatory intervention, or greater disallowance (e.g. challenging efficiency assumptions) or delaying of some costs (even where automatic fuel and purchased power recovery provisions are applicable).</p>	<p>Rate/tariff reviews and cost recovery outcomes are inconsistent, with some history of unfavorable regulatory decisions or unwillingness by regulators to make timely rate changes to address market volatility or higher fuel or purchased power costs. AND/OR Tariff formula may not take into account all cost components; investment are not clearly or fairly remunerated.</p>

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From: Moss, Mitchell [Mitchell.Moss@moodys.com]
Sent: Monday, August 17, 2009 3:41 PM
To: McGill, James T(Z71171)
Subject: RE: Book1.xls

Factor 1: Ba2
Factor 2: Baa2
Factor 3: Baa2 for both
Factor 4:
Liquidity: Baa2
CFO pre-WC Interest coverage: A3
CFO pre-WC to debt: Baa1
RCF to debt: Baa1
Debt to cap: Baa1

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