

APPENDIX 40

**Credit ratings for regulated energy
network services businesses
Kanangra**

**Credit Ratings
for Regulated Energy Network Services Businesses**

June 2013

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TERMS OF REFERENCE – CREDIT RATINGS FOR REGULATED ENERGY DISTRIBUTION AND TRANSMISSION BUSINESSES

Background

The Australian Energy Regulator (AER) is developing *Rate of Return Guidelines* that will form the basis of the regulated rate of return applied in energy network decisions. The AER published an issues paper in late December 2012 and a formal consultation paper in early May 2013 under the recently revised National Electricity Rules (NER) and National Gas Rules (NGR).

The AER undertook its last review of the weighted average cost of capital (WACC) in 2009 under a previous version of the NER.

The new NER and NGR require the AER, when determining the rate of return, to consider (amongst other things):

- Relevant estimation methods, financial models, market data and other evidence for determining the rate of return¹.

Estimating the benchmark cost of debt requires a benchmark credit rating assumption to enable the efficient financing costs to be recovered by the Service Provider.

As further detailed below, the Energy Network Association (ENA) would like to engage you to provide your opinion on the appropriate benchmark credit rating using techniques applied by the two largest credit rating agencies, Moody's and Standard & Poor's, within the scope of the *allowed rate of return objective*²:

"[t]he rate of return for a [Service Provider] is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applied to the [Service Provider] in respect of the provision of [services]"

Scope of work

The ENA requests your opinion on the appropriate credit rating for the "benchmark notional energy Network Service Provider" ('NSP') for regulatory purposes covering the following points:

- The methodology major rating agencies use in arriving at the credit rating, including:
 - a. Examination of comparable firms;
 - b. Industry risk management practices;
 - c. Liquidity;
 - d. Accessibility to capital;
 - e. Credit ratio analysis;
 - f. Industry Risk analysis.

¹ NER 6.5.2 (e)(1), 6A.6.2 (e)(1) and NGR 87 (5)(a).

² NER 6.5.2(c), 6A.6.2(c) and NGR 87 (3).

- A time study should be conducted on the change in rating resulting from the change in leverage which NSP since 2008.
- Comment on the type and term of debt and opine on best practice for the debt management issues facing NSPs
- Comment on the effect that the change in regulatory regime has on credit ratings and the extent to which varying regulation has an influence on the rating outcome.

The ENA requests the consultant to provide a report which must:

- Attach these terms of reference;
- Attach the qualifications (in the form of a curriculum vitae) of the person(s) preparing the report;
- Identify any current or future potential conflicts;
- Comprehensively set out the bases for any conclusions made;
- Only rely on information or data that is fully referenced and could be made reasonably available to the AER or others;
- Document the methods, data, adjustments, equations, statistical package specifications/printouts and assumptions used in preparing your opinion³;
- Include specified wording at the beginning of the report stating that “[the person(s)] acknowledge(s) that [the person(s)] has read, understood and complied with the Federal Court of Australia’s Practice Note CM 7, Expert Witnesses in Proceedings in the Federal Court of Australia” as if your brief was in the context of litigation;
- Include specified wording at the end of the report to declare that “[the person(s)] has made all the inquiries that [the person(s)] believes are desirable and appropriate and that no matters of significance that [the person(s)] regards as relevant have, to [the person(s)] knowledge, been withheld”; and
- State that the person(s) have been provided with a copy of the Federal Court of Australia’s “Guidelines for Expert Witnesses in Proceeding in the Federal Court of Australia” and that the Report has been prepared in accordance with those Guidelines, refer to Annexure A to these Terms of Reference or alternatively online at <<http://www.federalcourt.gov.au/law-and-practice/practice-documents/practice-notes/cm7>>.

The ENA intends to submit the consultant report to the AER in response to the consultation paper. Accordingly the report will become a public report.

Timeframe

The consultant is to provide a report by 11 June 2013.

³ Note: this requires you to reveal information that you might otherwise regard as proprietary or confidential and if this causes you commercial concern, please consult us on a legal framework which can be put in place to protect your proprietary material while enabling your work to be adequately transparent and replicable.

Fees

The consultant is requested to:

- Propose a fixed total cost of the project and hourly rates for the proposed project team should additional work be required;
- Advise which staff who will provide the strategic analysis and opinion; and
- Identify any current or future potential conflicts in undertaking the project.

Miscellaneous costs such as travel and accommodation will be reimbursed, provided that they are agreed with the ENA beforehand.

The author of this was David Howell



Signature

Dated 24 June 2013

Contacts

Any questions regarding this term of reference should be directed to:

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Annexure A

FEDERAL COURT OF AUSTRALIA
Practice Note CM 7
EXPERT WITNESSES IN PROCEEDINGS IN THE
FEDERAL COURT OF AUSTRALIA

1. Rule 23.12 of the Federal Court Rules 2011 requires a party to give a copy of the following guidelines to any witness they propose to retain for the purpose of preparing a report or giving evidence in a proceeding as to an opinion held by the witness that is wholly or substantially based on the specialised knowledge of the witness (see **Part 3.3 - Opinion** of the *Evidence Act 1995* (Cth)).
2. The guidelines are not intended to address all aspects of an expert witness's duties, but are intended to facilitate the admission of opinion evidence³, and to assist experts to understand in general terms what the Court expects of them. Additionally, it is hoped that the guidelines will assist individual expert witnesses to avoid the criticism that is sometimes made (whether rightly or wrongly) that expert witnesses lack objectivity, or have coloured their evidence in favour of the party calling them.

Guidelines

1. General Duty to the Court⁴

- 1.1 An expert witness has an overriding duty to assist the Court on matters relevant to the expert's area of expertise.
- 1.2 An expert witness is not an advocate for a party even when giving testimony that is necessarily evaluative rather than inferential.
- 1.3 An expert witness's paramount duty is to the Court and not to the person retaining the expert.

2. The Form of the Expert's Report⁵

- 2.1 An expert's written report must comply with Rule 23.13 and therefore must:
 - (a) be signed by the expert who prepared the report; and
 - (b) contain an acknowledgement at the beginning of the report that the expert has read, understood and complied with the Practice Note; and
 - (c) contain particulars of the training, study or experience by which the expert has acquired specialised knowledge; and
 - (d) identify the questions that the expert was asked to address; and
 - (e) set out separately each of the factual findings or assumptions on which the expert's opinion is based; and
 - (f) set out separately from the factual findings or assumptions each of the expert's opinions; and
 - (g) set out the reasons for each of the expert's opinions; and

³ As to the distinction between expert opinion evidence and expert assistance see *Evans Deakin Pty Ltd v Sebel Furniture Ltd* [2003] FCA 171 per Allsop J at [676].

⁴ The "*Ikarian Reefer*" (1993) 20 FSR 563 at 565-566.

⁵ Rule 23.13.

- (h) comply with the Practice Note.
- 2.2 The expert must also state that each of the expert's opinions is wholly or substantially based upon the expert's specialised knowledge⁶.
- 2.3 At the end of the report the expert should declare that "[the expert] has *made all the inquiries that [the expert] believes are desirable and appropriate and that no matters of significance that [the expert] regards as relevant have, to [the expert's] knowledge, been withheld from the Court.*"
- 2.4 There should be included in or attached to the report the documents and other materials that the expert has been instructed to consider.
- 2.5 If, after exchange of reports or at any other stage, an expert witness changes the expert's opinion, having read another expert's report or for any other reason, the change should be communicated as soon as practicable (through the party's lawyers) to each party to whom the expert witness's report has been provided and, when appropriate, to the Court⁷.
- 2.6 If an expert's opinion is not fully researched because the expert considers that insufficient data are available, or for any other reason, this must be stated with an indication that the opinion is no more than a provisional one. Where an expert witness who has prepared a report believes that it may be incomplete or inaccurate without some qualification, that qualification must be stated in the report.
- 2.7 The expert should make it clear if a particular question or issue falls outside the relevant field of expertise.
- 2.8 Where an expert's report refers to photographs, plans, calculations, analyses, measurements, survey reports or other extrinsic matter, these must be provided to the opposite party at the same time as the exchange of reports⁸.

3. Experts' Conference

- 3.1 If experts retained by the parties meet at the direction of the Court, it would be improper for an expert to be given, or to accept, instructions not to reach agreement. If, at a meeting directed by the Court, the experts cannot reach agreement about matters of expert opinion, they should specify their reasons for being unable to do so.

PA KEANE
Chief Justice
1 August 2011

⁶ *Dasreef Pty Limited v Nawaf Hawchar* [2011] HCA 21.

⁷ The "*Ikarian Reefer*" [1993] 20 FSR 563 at 565

⁸ The "*Ikarian Reefer*" [1993] 20 FSR 563 at 565-566. See also Ormrod "*Scientific Evidence in Court*" [1968] Crim LR 240

1. Executive Summary

This report addresses the role of credit ratings and their applicability and uses for NSPs.

In the Introduction the report outlines that credit ratings facilitate the analysis of credit worthiness of particular debt issues in the capital markets, and allow investors to rapidly compare one issue with another. The most prominent credit rating agencies in Australia are Standard and Poor's (S&P) and Moody's Investor Services (Moody's) as they have the most widely quoted rated entities and the ones with most rated issues in Australia. Market practice in different international markets have differing requirements for credit ratings – some require two, others one and a small number require no credit rating.

Both Moody's and S&P have developed sophisticated methodologies to decide on the rating of an issuer. Both have similar principles – that companies with low business risk profiles and/or companies with cash flow in excess of operating requirements (including debt service) will be rated higher than companies with high business risk profiles and/or a smaller cash buffer. S&P use the concept of the interplay between Business Risk Profile and Financial Risk Profile to arrive at a rating. Moody's, on the other hand, has published a series of Industry specific methodologies to explain the factors which guide the rating agency to assign a particular rating, and the weighting of each factor.

All Australian NSPs have a Business Risk Profile mapped by S&P as Excellent and have a variety of Financial Risk Profiles which largely determines their rating. Likewise most Australian DSNPs have very similar qualitative rating factors determined by Moody's. All Australian NSPs are rated between BBB-/Baa3 (the lowest investment grade rating) and A-/A3 (four notches higher), with the median rating of BBB/Baa2⁹. Based on experience dealing with these entities the authors has received opinions from NSPs that this allows each to access a diverse range of capital markets without limiting the company trying to keep a high rating.

As the qualitative factors driving each rating are very similar across all the Australian DSNPs ratings are distinguished by financial factors. By analysing the various financial metrics (particularly FFO Interest Cover and FFO/Debt) the rating of any Australian NSP can be estimated.

Examining the Notional NSP¹⁰ in the light of very similar qualitative factors for all Australian NSPs and a guide from the FFO Interest Cover and FFO/Debt from real examples it would appear that the benchmark Notional NSP would have a rating of BB+/Ba1 (or one notch either higher or lower), several notches below the historic desirable rating. Recent rulings by the AER have resulted in metrics which map to the low end of Baa2/BBB and would go to Baa3/BBB- if operating performance was in any way worse than planned.

When assessing credit profiles of NSPs the rating agencies are also concerned that the issuer has a spread of debt maturities, that debt is refinanced well in advance of maturity and that each NSP has adequate liquidity.

⁹ As this report focuses on the operating characteristics of the DSNPs, unless specifically stated the rating quoted is the underlying rating, dictated by qualitative and quantitative factors and not dependent on any support provided by parents.

¹⁰ The Notional DSNP is the benchmark 'pure play' energy distribution/transmission business with 60% gearing, which is expressed in the AERs Post-Tax Revenue Model which is used to derive the allowed revenue stream and produced for each regulatory decision.

The credit rating agencies have recently expressed some concerns that the AER is likely to change its approach and use more discretion. This attitude concerns the agencies because it allows the AER to change the financial metrics of the individual NSPs and thus affect negatively the Business Risk Profile of NSP, by introducing more volatility into the cash flow of the NSP. This increase in Business Risk would probably result in a drop in ratings for the NSPs.

2. Introduction

Credit ratings are opinions concerning the future financial health of a corporate debt issuer (Issuer) and specifically an opinion of the likelihood of debt investors being repaid on time and in full.

The purpose of credit ratings is to facilitate efficient movement of debt capital in the capital markets. The opinions provided by credit rating agencies are concerned with the future prospects on the financial health of Issuers that issue capital markets debt (generally bonds). The agencies use a standard short-hand nomenclature to describe their opinions, as well as explaining the reasons for their opinions. These short-hand terms, such as BBB, Baa2 and AAA, are used by investors to judge the credit worthiness of the debt issues and as a basis for estimating the pricing of the debt issue. By assigning a credit rating the credit rating agencies are assisting the investors make informed decisions concerning the debt issue. Without the rating agencies investors would have to conduct their own analysis on each issuer. This would slow the process of bond selection, purchasing and selling by investors.

An additional advantage of using credit ratings is that the agencies are able to interview Issuers and obtain confidential information which is not available to third party investors. This information is not divulged to the investors, but forms the basis of the predictive credit rating opinion. Thus the rating includes information which is not available to the investor without the intervention of the rating agency.

With the analysis which is done by the rating agencies and the information about future performance embedded in the credit rating, investors find it easier to purchase debt from rated versus unrated entities. This increases the demand for rated corporate debt and results in a reduction in the price of the debt. This manifests itself in the reduction in the interest rate paid by issuers of rated debt versus issuers of unrated debt.

While anyone could provide an opinion as to the future creditworthiness of a corporate entity, the United States Security and Exchange Commission (SEC) has recognised nine National Recognised Statistical Rating Organisations (NRSROs) which the SEC permits to issue credit ratings for certain regulatory purposes. The designation of NRSRO gives the entities with this title prominence in the credit rating industry, and nearly all investors require NRSRO designation to lend credence to the opinions published. The designation of NRSRO gives the credit rating agency credibility not just in the US but globally, as NRSROs have procedures and reputation built around the NRSRO process. Of these nine, three exist in Australia –S&P, Moody's and Fitch Ratings (Fitch).

The number of Australian corporates rated by S&P and Moody's are very similar whereas the number rated by Fitch is much fewer, leading to most issuers and investors preferring S&P and Moody's over Fitch. S&P is regarded as the premier rating agency in Australia, partly because it is better known, and partly because the short-hand used by S&P is more commonly understood by issuers and investors. There are very few issuers rated only by Moody's or by Fitch, but there are a number which have an S&P rating only.

Each international debt market has differing requirements concerning the number of ratings for Issuers. The US 144A market requires two investment grade ratings (generally S&P and Moody's) without which it is not possible to issue debt in that market. On the other hand, the Australian and European MTN¹¹ market require only one rating and the US Private Placement market does not need an external rating¹². None of these markets is available without an investment grade rating¹³. Non-investment grade issuers can issue debt in the US high yield (junk) bond market, either with or without a rating at considerably high interest rates.

Without ratings, Issuers are forced to raise debt capital from banks, private placement or high yield debt markets which are limited in depth and thus, in my opinion, this leads them to be more expensive for borrowers than when ratings are obtained.

3. Methodologies

The methods used by rating agencies has changed dramatically of the last 10 years, precipitated initially by some major corporate collapses in the US in the early 2000's, particularly Enron and WorldCom, and more recently by the Global Financial Crisis (GFC)¹⁴. Both Moody's and S&P use similar general principles and analytical techniques in arriving at the credit rating for all Issuers. In general ratings are guided by the following factors:

- Companies operating in environments with modest business risk profiles are rated higher than those with more aggressive business risk profiles, everything else being equal;
- Companies with better financial metrics are rated higher than those with lower financial metrics everything else being equal

When examining financial metrics, it is not sufficient for an Issuer to have only sufficient funding to repay its debt with no excess funds available. The credit rating agency will require the Issuer to have excess funds available to divert to debt service if the need arises (e.g. adverse operating conditions, debt market disruptions). The amount of excess funding required will be dependent on the business risk profile of the Issuer for a given rating. A company operating in a high business risk environment will be required to have more excess funding than one operating in a low business risk environment if the two entities have the same credit rating. Alternately, with the same amount of excess funding the company operating in the low business risk environment will have a higher rating than the one operating in the high business risk environment.

As an example, Caltex and Powercor have the same rating (BBB+). Caltex's business risk profile is described by S&P as "Satisfactory", Powercor's business risk profile is described as "Excellent", meaning that Powercor operates in an environment with more benign business risks. Accordingly Powercor can have lower excess funding (with EBITDA/Interest of 2.5x in 2012) whilst Caltex has EBITDA/Interest of around 8x. Were Caltex to have EBITDA/Interest of 2.5x (similar to Powercor) its rating would almost certainly be below that of Nufarm (BBB-), which has the same business risk profile as Caltex but EBITDA/Interest metric of 3.7x.

¹¹ MTN = Medium Term Note

¹² The US Private Placement market has its own rating governed by National Association of Insurance Commissioners (NAIC). The NAIC rating default to credit rating agencies ratings if available, otherwise the NAIC does their own rating

¹³ Or in the case of US Private Placements an equivalent NAIC rating

¹⁴ 2008-2010

S&P have formalised its rating process by assigning two types in risk profiles to each issuer – business risk profile and financial risk profile. These profiles are relatively independent and each is stated by S&P in its research. S&P has also expanded the section in published research on financial metric adjustments. The agency makes changes to debt, interest and cash flow metrics from the figures reported in the financial statements of the Issuer to account for items which the agency believes are debt-like in nature but not captured in the financial statements. Such items are hybrid securities, operating leases and pension obligations are examples. These adjustments also serve to allow comparison of Issuers which have different treatments of financial obligations.

S&P published a rating matrix that derives a rating given particular business risk and financial risk profiles. This matrix is replicated below.

Table 1: S&P Grid of Business and Financial Risk Profiles¹⁵

Financial vs. Business	Minimal	Modest	Intermediate	Significant	Aggressive	Highly Leveraged
Excellent	AAA/AA+	AA	A	A-	BBB	-
Strong	AA	A	A-	BBB	BB	BB-
Satisfactory	A-	BBB+	BBB	BB+	BB-	B+
Fair	-	BBB-	BB+	BB	BB-	B
Weak	-	-	BB	BB-	B+	B-
Vulnerable	-	-	-	B+	B	B- or below

Moody's, on the other hand, has taken a different tack in making the rating process more transparent. The agency has published a series of over 150 industry methodologies. This is based on the assumptions that within each industry (for example mining) there are a series of factors which are unique to that industry and which determine the rating. Each methodology listed the factors that are taken into account in assigning the rating. Each factor (there could be between 6 and 16 factors depending on the industry) is assigned features which determine the characteristics of that factor at different rating levels and a weighting for each factor.

The weighted average of all the factors maps to the rating. In Section 4.3 below, this Report addresses Moody's "Regulated Electricity and Gas Networks"¹⁶ which is an example of the methodologies published.

Although these new additions to the rating process have been welcomed by issuers and investors alike, both ratings agencies point out that an ultimately assigned rating may not necessarily be exactly the rating as mapped from the methodology¹⁷. Other factors, not listed in the methodology, and a weighting not anticipated in the methodology may lead to the agency assigning a different rating. Moody's points out that around 80% of ratings however should be within one notch of the rating anticipated by the methodology.

¹⁵ General Methodology: Business/Financial Risk Matrix Expanded, 19 September 2012

¹⁶ Moody's: "Regulated Electric and Gas Networks", August 2009

¹⁷ Moody's has qualified its methodology with the following comment: "the grid-indicated rating is not expected to always match the actual rating of each company."

4. Factors Influencing the Credit Rating of a Regulated Energy Distribution Business

The author has been asked to examine all the factors which both S&P and Moody's use in assigning a rating to an Australian regulated energy network business and comment on:

- a) the details of each of the factors;
- b) the weighting of each of the factors;
- c) the methods by which the rating agencies assess the factors;
- d) the methods by which the rating agencies arrive at the financial metrics.

4.1. Context

S&P and Moody's have been rating electricity and gas networks for over 20 years across the world, but primarily in the United States, Australia, New Zealand and UK and other European jurisdictions. As explained in the Introduction the purpose of obtaining a rating has allowed Issuers in all these jurisdictions to be able to issue competitively priced debt in the capital markets.

Moody's and S&P have different rating scales, and nearly all companies with both ratings will have an equivalent rating from each agency. The comparison between the two rating agencies is shown in the following table:

Table 2: Relationship between S&P and Moody's ratings

	S&P	Moody's
Investment Grade	A+	A1
	A	A2
	A-	A3
	BBB+	Baa1
	BBB	Baa2
	BBB-	Baa3
Non-Investment Grade	BB+	Ba1
	BB	Ba2
	BB-	Ba3

Ratings of BBB-/Baa3 and above are regarded as Investment Grade (IG) and those of BB+/Ba1 and below are regarded as Non-Investment Grade (NIG) or Speculative Grade. As explained in the Introduction an Issuer with an Investment Grade rating has a broader range of capital markets in which to issue debt, than if the Issuer had Non-Investment Grade rating.

This equivalence can be seen in the following table, which is a list of all the rated Australian NSPs. From Table 3 it can be seen that NSPs in Australia are rated in a range from A-/A3 to BBB-/Baa3:

Table 3: Current ratings of Australian NSPs

Issuer	S&P	Moody's
SA Power Networks	A-, Stable	A3, Stable
Citipower	BBB+, Stable ⁽¹⁾	NR
Powercor	BBB+, Stable ⁽¹⁾	Baa1, Negative
SP Ausnet Group	BBB+, Stable	A3, Stable ⁽¹⁾
ElectraNet	BBB, Stable	Baa1, Stable
United Energy Distribution	BBB, Stable	Baa2, Stable
ATCO Gas Australia	BBB, Positive	Baa2, Stable
Envestra	BBB, Stable	Baa2, Stable
SPI Assets	BBB, Stable	NR
Energy Partnership (Gas) (Multinet)	BBB-, Stable	Baa3, Stable

Note: All the above companies are the asset owning companies, and thus their rating is related to the business and financial performance of the networks. Excluded are holding companies and companies with a diverse set of assets, whose rating is not directly related to the NSPs. (1): This is the stand-alone rating without the benefit of ownership uplift. It reflects the performance of the business itself and thus can be compared with other issuers

NR = Not rated

Most NSPs have a stand alone rating of between BBB+/Baa1 and BBB/Baa2. The author understands that reasons the NSPs manage their businesses to this rating range include

- An IG rating allows them to access a broad range of domestic and foreign (particularly US) markets and they can issue debt in the Private Placement market as well as the 144A market in the US with this rating range;
- The cost of debt is manageable in this range. A NIG rating would lead to high cost of debt and a rating higher than A-/A3 would mean that the issuer had to be prohibitively conservative in order to keep the rating;
- Most issuers like to have a rating of at least BBB/Baa2 so that even in severe downside the rating could drop one notch without becoming NIG. A BBB/Baa2 rating thus provides a cushion in the worst case.

It is possible for a NSP (or other company) to have two ratings which are different. For example, the ratings of ElectraNet are Baa1 (from Moody's) and BBB (from S&P) which is one notch lower. In this situation the market has a convention of pricing the issue from that company on the lower of the two ratings.

4.2. Standard and Poor's:

In common with other corporate ratings undertaken by S&P, the agency judges the credit of NSPs according to two factors: Business Risk Profile and Financial Risk Profile¹⁸. These factors are judged independently and the rating is derived by examining the relation between the two profiles.

¹⁸ 2008 Corporate Criteria: Analytical Methodology, April 2008.

The Business Risk Profile can be ranked as either Excellent (being the lowest risk) through Strong, Satisfactory, Fair, Weak to Vulnerable (the highest business risk). S&P always states the exact Business Risk Profile they have decided upon in their written opinions of individual companies.

Most industrial corporates in Australia are characterised as having a Satisfactory Business Risk Profile. Examples are Nufarm, Caltex and Mirvac. Westfield and Woolworths have Strong Business Risk Profile, whilst Fortescue Metals Group has a Fair profile and Boart Longyear has a Weak profile.

The Financial risk encompasses a number of sub-factors including cash flow adequacy:

1. Financial Policy/Governance/Risk Tolerance: S&P attempts to form an opinion concerning the risk tolerance of the companies and the manifestation of this appetite to risk in policies and governance. Discipline and measurement of progress towards these goals is important, not just goal setting itself.
2. Accounting characteristics and information risk: S&P gets much of the financial information on an issuer from financial reports and the veracity and reliability of these is of paramount importance to the agency. Complete financial reports, with all the attendant notes, are very important in order for the agency to make the financial adjustments so that one company's financials can be compared with others.
3. Cash Flow Adequacy: The focus of the agency is on the ability of the issuer to generate cash in order to service debt and other obligations. Profit does not always translate into cash flow and thus the agency is concerned about the cash debt serviceability of the issuer and its ability to continue operations in the downturn in its business.¹⁹ S&P looks at Funds from Operations (FFO) as the measure of the amount of cash generated from the ongoing business, ignoring non operational cash generation (such as working capital changes, additional debt or equity raised) and prior to capital expenditure and dividends.
4. Capital Structure and Asset Protection: This entails an analysis of the levels and amount of debt built in to the capital structure of the issuer. This leads to a conclusion of the leverage of the company and amount of financial flexibility the issuer possesses.
5. Liquidity/Short term Factors: Short term issues could bring down a company with strong long term financial characteristics. Factors such as law suits and environmental clean-up, capital market access could lead to short term issues. In addition S&P assesses the liquidity of an issuer, by judging the short term (12-24 months) sources and uses of cash to establish if the company could face liquidity problems. Such sources as cash and undrawn credit lines are counted in this calculation. S&P has a designation of levels of liquidity and a label of "Less than Adequate" or worst means that the Sources of Liquidity for the next 12 months is less than 1.2 times the Uses of Liquidity. This designation is the credit negative factors and it is very seldom that a corporate with this designation is rated Investment Grade²⁰

The Financial Risk Profile can be from Minimal (the lowest financial risk), through Modest, Intermediate, Significant and Aggressive to Highly Leveraged (the most financial risk).

Most Australian industrial corporates exhibit an Intermediate Financial Risk Profile. Westfield, Wesfarmers, Woolworths, Nufarm and Coca Cola Amatil fall into this band. On the other hand Caltex shows a Modest profile but Boart Longyear show a Significant Financial risk.

The interplay²¹ between the Business Risk Profile and Financial Risk Profile will determine the rating.

Lower ratings will result from issuers with more significant Business Risk Profiles than those which exhibit lower Business Risks. Likewise issuers with high financial risk will be rated lower than those with lower financial risk. Thus two issuers with similar Business Risk Profiles could be rated differently if their Financial Risk Profiles are different.

For instance, if an issuer has a Satisfactory Business Risk Profile and an Intermediate Financial Risk profile then it will be rated BBB. However different combinations can also lead to the same rating – a company with Excellent Business Risk profile can afford to have a more risky financial risk profile and thus can have an Aggressive Financial Risk profile and still be BBB.

A concrete example is given in the Introduction in which Caltex and Powercor have the same rating (BBB+²²). Caltex's Business Risk Profile is described by S&P as Satisfactory and Financial Risk Profile is Modest, whereas Powercor's Business Risk Profile is described as Excellent and Financial Risk Profile is described as Significant.

The interaction between Business Risk Profile and Financial Risk Profile is shown in Table 4 below:

Table 4: S&P Matrix of Business Risk Profile and Financial Risk Profile

Financial vs. Business	Minimal	Modest	Intermediate	Significant	Aggressive	Highly Leveraged
Excellent	AAA/AA+	AA	A	A-	BBB	-
Strong	AA	A	A-	BBB	BB	BB-
Satisfactory	A-	BBB+	BBB	BB+	BB-	B+
Fair	-	BBB-	BB+	BB	BB-	B
Weak	-	-	BB	BB-	B+	B-
Vulnerable	-	-	-	B+	B	B- or below

From the table the weighting of each Business versus Financial factors can be seen to be almost equal. This can be shown by examining the Satisfactory/Intermediate (BBB box). A worsening of either Business Risk Profile (to Significant) or Financial Risk Profile (to Fair) would lead to a downgrade to BB+.

²¹ See "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded" S&P, 18 September 2012

²² In the case of Powercor's rating the rating of BBB+ is the underlying rating without support from its parent, and thus reflects its business and financial underlying characteristics.

4.3. Moody's

Moody's has taken a different tack to S&P and has published a series of industry methodologies which outlines the ratings drivers for each industry. Each methodology lists the factors which are important to the rating for companies in that industry, the characteristics of each factor at each rating level and the weighting of each factor in determining the rating.

NSPs are rated according to the "Regulated Electric and Gas Networks" methodology²³ which was used to rate 53 networks around the globe when it was published in August 2009. The table below shows the factors and the weighting of each factor in arriving at the rating.

Table 5: Moody's factors in rating NSPs

Factor Number	Broad Rating Factors	Rating Sub-Factor	Sub-Factor Weight
1(a)	Regulatory Environment and Asset Ownership Model	Stability and Predictability of Regulatory Regime	15%
1(b)		Asset Ownership Model	10%
1(c)		Cost and Investment Recovery	10%
1(d)		Revenue Risk	5%
2(a)	Efficiency and Execution Risk	Cost Efficiency	6%
2(b)		Scale and Complexity of Capital Programme	4%
3(a)	Stability of Business Model and Financial Structure	Ability and Willingness to Pursue Opportunistic Corporate Activity	3.33%
3(b)		Ability and Willingness to Increase Leverage	3.33%
3(c)		Targeted Proportion of Operating Profit Outside Core Regulated Activities	3.33%
4(a)	Key Credit Metrics	Adjusted ICR (or FFO Interest Cover)	15%
4(b)		Net Debt/RAV (or Fixed Assets)	15%
4(c)		FFO/Net Debt	5%
4(d)		RCF/Capex	5%
			100%

Each of the sub-factors above has a range of mapping characteristics (from Aaa, Aa, A Baa, Ba and B) which reflects the attributes of a company rated in that band. For example, within the Cost Efficiency sub-factor the following are the limit of results:

²³ Rating Methodology: Regulated Electric and Gas Networks, August 2009

- For an issuer to rate Aaa on this sub-factor it would have to show a “track record of very high performance versus regulator’s assumptions across regulatory periods on key measures (e.g. WACC, opex and capex);
- For an issuer to map to Baa on this sub-factors it would have “performance in line with benchmarks/ regulator’s assumptions across regulatory periods on key measures (e.g. WACC, opex and capex); and
- For an issuer to map to B on this sub-factor the issuer must display “poor track record across regulatory periods on key measures (e.g. WACC, opex and capex).

From these sub-factors the weighted averages are summed to arrive at a rating. As an example, the rating of ElectraNet in the 3/2013 opinion is calculated as follows:

Table 6: Example: Moody’s rating of ElectraNet

Factor Number	Rating Sub-Factor for ElectraNet	Sub-Factor Weight	Ranking of the factor	Weighted Score
1(a)	Stability and Predictability of Regulatory Regime	15%	Aaa	1
1(b)	Asset Ownership Model	10%	Aa	3
1(c)	Cost and Investment Recovery	10%	A	6
1(d)	Revenue Risk	5%	Aa	3
2(a)	Cost Efficiency	6%	Aaa	1
2(b)	Scale and Complexity of Capital Programme	4%	Baa	10.35
3(a)	Ability and Willingness to Pursue Opportunistic Corporate Activity	3.33%	A	6
3(b)	Ability and Willingness to Increase Leverage	3.33%	Baa	10.35
3(c)	Targeted Proportion of Operating Profit Outside Core Regulated Activities	3.33%	A	6
4(a)	Adjusted ICR (or FFO Interest Cover)	15%	Baa	10.35
4(b)	Net Debt/RAV (or Fixed Assets)	15%	Baa	10.35
4(c)	FFO/Net Debt	5%	A	6
4(d)	RCF/Capex	5%	Ba	24
		100%		

Each factor rating has a weighted score, as shown above. By multiplying the weighted score by the sub-factor weighting and summing the answers ElectraNet’s overall score is 7.02, and Moody’s have stated in the methodology that a score between 6.50 and 7.49 maps to Baa1. Their assigned rating for ElectraNet is Baa1.²⁴

²⁴ Rating Methodology: Regulated Electric and Gas Networks, August 2009

5. Relationship Between Gearing and Credit Rating

I have been asked to compare the credit ratings of all Australian networks to arrive at a list of determining characteristics of each and the relationship between the level of debt, the RAB and the rating.

Although it is not possible to compare each of the sub-factors listed in the S&P methodology it is generally possible to examine the Business Risk Profile and Financial Risk Profile for each issuer.

Below is a table outlining the S&P ratings and the relevant Risk Profile:

Table 7: S&P Business and Financial Risk Profiles of Australian NSPs

Issuer	Date of Latest Publication	Business Risk Profile	Financial Risk Profile	“Mapped Rating”	Rating	Notches
SA Power Networks	11/2012	Excellent	Significant	A-	A-	0
Citipower	4/2012	Excellent	Significant	A-	BBB+ ⁽¹⁾	-1
Powercor	4/2012	Excellent	Aggressive	BBB	BBB+ ⁽¹⁾	+1
ElectraNet	12/2012	Excellent	Aggressive	BBB	BBB	0
United Energy Distribution	7/2012	Excellent	Aggressive	BBB	BBB	0
ATCO Gas Australia	1/2013	Excellent	Significant	A-	BBB	-2
Envestra	11/2012	Excellent	Aggressive	BBB	BBB-	-1
Energy Partnership (Gas)	6/2012	Excellent	Aggressive	BBB	BBB-	-1
SP Ausnet	4/2012	Excellent	Significant	A-	BBB+	-1

(1) = underlying rating prior to any uplift due to ownership by a stronger entity

It can be seen that all rated NSPs have the same Business Risk Profile – Excellent and that Financial Risk Profile varies from Significant for the higher rated issuers to Aggressive for the lower rated ones. S&P regards the Business Risk Profile of NSPs as Excellent due to the supportive regulatory framework, predictable cash flow, As each NSP has the same Business Risk Profile the descriptions written by S&P are very similar - for instance in the December 2012 opinion on ElectraNet S&P stated:

“ElectraNet’s “excellent” business risk profile is underpinned by its stature as the sole, franchised, natural monopoly, electricity-transmission business in South Australia”. In a recent opinion on Envestra S&P have written that Envestra’s business risk profile is excellent due to the “natural monopoly operations and the high economic barriers to entry for alternate suppliers”.²⁵

²⁵ Standard & Poor’s, Research ElectraNet Pty Ltd, December 12, 2012

The “mapped” rating derived from Table 2 above is generally within one notch of the actual assigned rating. The only exception is ATCO Gas Australia and S&P have noted²⁶ that the metrics have improved and the rating should be upgraded in the short term.

5.1. The Relationship between Debt Amount and Rating

As all the Business Risk Profiles are the same (Excellent) it therefore follows that S&P must only use the Financial Risk Profile to distinguish between ratings. Table A in the Appendix highlights the relationship between the rating and some debt metrics.

S&P stresses FFO Interest Cover and FFO/Debt as financial drivers for the ratings, and often quote a change in either or both of these metrics to be a trigger for the rating change. For example, in the 12/2012 Opinion on ElectraNet S&P stated “for rating stability, we expect FFO interest cover of about 1.8x and FFO to adjusted total debt of better than 8%” and “downward pressure may arise if ElectraNet’s adjusted credit metrics deteriorate ... such that they are below FFO interest cover of 1.7x and FFO/debt of 8%”.²⁷

A study of the triggers for financial metrics can be derived from Table A in the Appendix and is summarised below:

Table 8: Summarised financial metric limits from S&P

	FFO Interest Cover	FFO/Debt
A-	3.0-3.5x	15%-16%
BBB+	2.5-3.0x	12% - 15%
BBB	1.9 – 2.5x	8%-11%
BBB-	1.7 – 1.9x	5% - 8%

FFO/Debt is the metric used to assess the effect of gearing on the ability of an Issuer to make debt repayments in a timely manner.

It is worth emphasising that were the company to have just sufficient cash flow (FFO) which is after opex and tax payments to pay interest then the FFO Interest Coverage would be 1.0. Referencing back to Table 8, clearly this would result in the rating very much lower than the IG ratings currently achieved by the NSPs. The rating agencies expect that IG NSPs have a multiple of nearly twice or better (FFO Interest of 1.7x as a minimum for BBB-/Baa3) the amount of funds available to cover their interest obligations. These additional funds are the “excess funding” referred in the Introduction.

²⁶ Standard & Poor’s, ATCO Gas Australia LP Outlook Revised To Positive On Expected Stronger Financial Profile; 'BBB' Ratings Affirmed, January 10, 2013

²⁷ Standard & Poor’s, Research ElectraNet Pty Ltd, December 12, 2012

Moody's

As Moody's publishes the mapping for each factor for each Issuer the actual rating drivers can be directly compared. As the weightings of each factor are shown it can be seen that 60% of the rating is dictated by non-financial factors (factor 1, 2 and 3, Table 6) and that 40% is driven by financial metrics (factor 4 in Table 6).

Table 9: The mapping of each factor for all Moody's rated NSPs

Issuer	Date of Publication	1(a)	1(b)	1(c)	1(d)	2(a)	2(b)	3(a)	3(b)	3(c)	4(a)	4(b)	4(c)	4(d)
		15%	10%	10%	5%	6%	4%	3.3%	3.3%	3.3%	15%	15%	5%	5%
SA Power Networks	9/2012	Aaa	Aa	A	A	Aaa	Ba	A	Baa	A	Baa	Ba	A	Ba
United Energy Distribution	5/2012	Aaa	Aa	A	A	Aa	Ba	A	Baa	A	Ba	B	Ba	B
Powercor	8/2012	Aaa	Aa	A	A	Aaa	Ba	A	Baa	A	Baa	Ba	Baa	B
ElectraNet	4/2012	Aaa	Aa	A	Aa	Aaa	Baa	A	Baa	A	Baa	Baa	A	B
ATCO Gas Australia	12/2012	Aaa	Aa	A	A	Aaa	Baa	A	A	A	Ba	Baa	Baa	Ba
Envestra	5/2012	Aaa	Aa	A	A	Aa	Aa	A	Baa	A	Ba	Ba	Ba	B
Energy Partnership (Gas)	5/2012	Aaa	Aa	A	A	Aa	Aa	A	Baa	A	Ba	B	Ba	Ba
Upper Range		Aaa	Aa	A	Aa	Aaa	Aa	A	A	A	Baa	Baa	A	Ba
Lower Range		Aaa	Aa	A	A	Aa	Ba	A	Baa	A	Ba	B	Ba	B

Each of the factors for all the NSPs have been listed in Table 9 (above). It can be seen that factors 1(a), 1(b), 1(c), 3(a) and 3(c) (representing 42.7% of the rating) are the same for all issuers. This is consistent with the S&P approach in which the Business Risk profile is the same for all issuers.

The mapping within the methodology is not sufficiently detailed for the difference between individual notches to be deduced from the methodology. For example FFO Interest Cover of 2.5x to 3.5x maps to a Baa credit (not Baa1, Baa2 or Baa3 - a single rating)

The author has listed (in Table B of the Appendix) the rating triggers listed in recent Moody's research to establish the limits of the rating categories. Moody's uses different financial metrics to that of S&P. For almost

all Issuers, limits for ratings for FFO Interest Cover and FFO/Debt are stated, and Debt/RAB stated less frequently²⁸ From analysis of the Table B in the Appendix the summary table 10 below can be deduced:

Table 10: Summarised financial metric limits from Moody's

Rating	FFO Interest Cover
A3	2.6/3.0-4.0x
Baa1	2.3/2.5 – 2.9/3.0x
Baa2	1.8/2.0 – 2.3/2.5x
Baa3	1.4-1.8x

The metrics from Moody's and S&P for "normal" industrial corporates can be difficult to compare as both agencies use different adjustments when arriving at the adjustments to debt. In particular the treatment of operating lease liabilities, pension obligations and hybrids result in a different debt amount. As an example, for ElectraNet S&P calculated 2011 FFO Interest Cover and FFO/Debt at 1.9x and 8.6% whereas Moody's calculated 2.3x and 11.1%. Most of the DSNPs however have no hybrid securities issued²⁹ and have no material amount of operating leases³⁰. Thus the metrics can be compared between S&P and Moody's and when considering the notional benchmark NSP the methodologies used by both the major ratings agencies will be directly comparable (i.e. there are no operating lease liabilities, pension obligations or hybrid securities in the capital structure of the benchmark NSP).

5.2. Uplift from Ownership Structure

Citipower and Powercor exhibit a one notch uplift in their S&P ratings from BBB+ to A-, due to "support from majority owner Cheung Kong Infrastructure Holdings Ltd (A-) and CKI's affiliate Power Assets Holdings Ltd. (A+). CKI and Power Assets have undertaken to maintain minimum financial metrics consistent with the relevant subsidiary's current credit profile."³¹

SA Power Networks has similar ownership but the underlying rating is A- and so the rating does not receive any uplift, as the owner of SA Power Networks has a similar rating to its subsidiary and thus no rating uplift is possible.

None of the NSP issuers rated by Moody's receive a similar uplift. The amount of uplift is decided by rating committees within each agency, and it is a matter of judgement but historically the uplift has been plus one notch.

²⁸ See Table B, in the Appendix to see the numbers of references from Moody's to each financial metric

²⁹ The only example of hybrid issued known by the author is ElectraNet

³⁰ DSNPs have modest leases (up to \$10m per annum lease payments) – office equipment and motor vehicles. This compares to say Woolworths which leases most of its retail premises and Qantas which leases a large number of aircraft.

³¹ Standard & Poor's, Research Powercor Australia LLC, April 3, 2013

Table 11: Relationship between the mapped and actual rating – Moody's

Issuer	Date of Publication	Mapped Rating	Actual Rating	Notching
SA Power Networks	9/2012	Baa1	A3	+1
United Energy Distribution	5/2012	Baa3	Baa2	+1
Powercor	8/2012	A3	A3	0
ElectraNet	4/2012	A3	Baa1	-1
ATCO Gas Australia	12/2012	Baa1	Baa2	-1
Envestra	5/2012	Baa2	Baa2	0
Energy Partnership (Gas)	5/2012	Baa3	Baa3	0

It can be seen from the table above that the methodology is useful in predicting the actual rating, as all the ratings are within one notch of the rating derived from mapping.

6. Credit Rating for Benchmark NSP

The author has been asked to construct a theoretical “benchmark notional NSP” and estimate what the rating would be a various debt and leverage levels.

6.1. Assumptions Used in Credit Rating Analysis of Notional NSP

- Cash flows were used from the AER Post-Tax Revenue Models (PTRMs) for the most recent Final Decisions for ElectraNet, Envestra Victoria, Multinet, and GasNet.
- Agencies add obligations other than debt obligations to the credit metrics of issuers. Such obligations as operating lease payments, defined pension obligations, remediation and other environmental clean-up and some elements of hybrid securities are added to the debt load of entities. Associated changes are made to EBITDA, EBIT, FFO, Capex and other financial metrics .. In order to deal with these vagaries in rating the following has also been assumed:
 - The notional NSP has no defined pension scheme which would lead to obligations post-retirement to employees;
 - It has no operating leases;
 - It has only one seniority of debt (senior unsecured debt or senior secured debt, but not both) and has no other capital market instrument have been issued (with the exception of common equity)
 - It has no capitalised interest
- The rating agencies deduct changes in working capital from Cash From Operations to arrive at Funds from Operations (FFO). As there is no working capital in the Model, it is assumed that the working capital changes between each period are zero.
- It has assumed that the rating agency would look at the average of the five years in future to calculate the financial metrics. In reality the agency would examine two or three years history and two to three years future forecast to arrive at averages.

- Given the PTRM allowance of zero cash held by the NSPs, it has also been assumed that cash amount held in the NSP is zero throughout the rating period, and thus Net Debt is equivalent to Gross Debt..
- With particular application to S&P it is assumed that the Business Risk Profile for the Notional NSP is Excellent, in common with all existing Australian rated NSPs

6.2. Moody's Methodology

Using these assumptions and the Moody's methodology the following are the rating sub-factors which would apply to the Notional NSP.

Table 12: Moody's rating of the Notional NSP using 5 year forecasts

Issuer	1(a)	1(b)	1(c)	1(d)	2(a)	2(b)	3(a)	3(b)	3(c)	4(a)	4(b)	4(c)	4(d)
	15%	10%	10%	5%	6%	4%	3.3%	3.3%	3.3%	15%	15%	5%	5%
Notional NSP	Aaa	Aa	A	A	Aa	A	A	Baa	A	Ba	A	Ba	B

This set of sub factors map to the very bottom of Baa3, and from the above commentary showing that the actual rating is within one notch of the mapped rating, then the actual rating could be between Ba1 and Baa2.

Were the agency to use three year averages of the forecasts then the following table of factor mapping would result.

Table 13: Moody's rating of the Notional NSP using 3 year forecasts

Issuer	1(a)	1(b)	1(c)	1(d)	2(a)	2(b)	3(a)	3(b)	3(c)	4(a)	4(b)	4(c)	4(d)
	15%	10%	10%	5%	6%	4%	3.3%	3.3%	3.3%	15%	15%	5%	5%
Notional NSP	Aaa	Aa	A	A	Aa	Baa	A	Baa	A	Ba	A	Ba	B

With the drop in 2(b) from A to Baa, the resultant mapped rating is now one notch lower at Ba1, and the range of rating would be Ba2 to Baa3. See the reasons in Appendix 2.

6.3. Standard and Poor's Methodology

Assuming that the Moody's and S&P treatment of non-balance sheet debt adjustments are the same the FFO Interest Cover and FFO/Debt for the next five years are 1.57x and 5.7% respectively. This maps, using the information of Table 5 to below BBB, but the actual rating is hard to establish from the date set given in the table.

6.4 AERs final decision models

The author has been asked to examine the recent AER Post-Tax Revenue Models (PTRMs) for NSPs which have been published by the AER in the recent past.

Table 14: Recent AER Rulings

	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
ElectraNet					
FFO Interest Cover	2.23	2.18	2.18	2.18	2.24
FFO/Debt	8%	8%	8%	8%	8%
Implied Rating	Baa2/BBB ³²	Baa2/BBB	Baa2/BBB	Baa2/BBB	Baa2/BBB
Investra Victoria					
FFO Interest Cover	2.15	2.01	1.99	1.98	1.99
FFO/Debt	8%	7%	7%	6%	7%
Implied rating	Baa2/BBB/BBB-	Baa2/BBB-	Baa2/BBB-	Baa2/BBB-	Baa2/BBB-
Multinet					
FFO Interest Cover	2.69	2.10	2.12	2.20	2.26
FFO/Debt	11%	7%	7%	8%	8%
Implied rating	Baa1/BBB+	Baa2/BBB/BBB- ³³	Baa2/BBB/BBB-	Baa2/BBB/ BBB-	Baa2/BBB/ BBB-
GasNet					
FFO Interest Cover	2.29	2.16	2.04	2.03	2.12
FFO/Debt	8%	7%	7%	7%	7%
Implied rating	Baa2/BBB	Baa2/BBB ³⁴	Baa2/BBB/ BBB-	Baa2/BBB/ BBB--	Baa2/BBB/ BBB-

All the above AER decisions have resulted in rating on the lower limit of Baa2/BBB and any performance worse than that which is forecast would lead to a downgrade to Baa3/BBB-

7. Changes in Ratings 2008-13

I have asked to examine the credit rating of all the networks over a period from 2008 until 2013 to see if there are patterns of deleverage and rating improvement.

7.1. Standard and Poor's

The history of rating for the NSP since 2008 is shown in the following table.

³² Although the FFO Interest Cover maps to Baa2/BBB, the FFO/Debt is marginal and could be BBB-

³³ From 2014 onwards the FFO/Debt metrics maps to margin BBB/BBB-

³⁴ From 2014 the FFO/Debt metrics maps to BBB-

Table 15: Changes in S&P Rating from 2008 to 2013

Issuer	Rating at end of 2008	Rating at end of 2009	Rating at end of 2010	Rating at end of 2011	Rating at end of 2012	Current rating
SA Power Networks	A-	A-	A-	A-	A-	A-
Citipower	A-	A-	A-	A-	A-	A-
Powercor	A-	A-	A-	A-	A-	A-
ATCO Gas Australia	NR	NR	NR	BBB	BBB	BBB, Pos
United Energy Distribution	BBB	BBB	BBB, Neg	BBB	BBB	BBB
ElectraNet	BBB+, Neg	BBB	BBB	BBB	BBB	BBB
Envestra	BBB-, Neg	BBB-	BBB-	BBB-	BBB-, Pos	BBB
SPI Assets	A-	A-	A-	A-	A-	BBB+
SP Ausnet Group	A-	A-	A-	A-	A-	BBB+
Energy Partnership (Gas) (Multinet)	BBB-	BBB-	BBB-	BBB-	BBB-	BBB-

NB: "Neg" = Negative Outlook; "Pos" = Positive outlook; Others are Stable Outlook.³⁵

As can be seen from the above table there has been very little movement in the ratings of NSPs since 2008:

- ElectraNet has dropped a notch due to a change in the treatment of a hybrid by S&P and
- Envestra has improved from Negative outlook to Positive outlook as its financial performance improved, and has recently been upgraded to BBB
- Singapore Power (rated AA-) has recently sold its interest in SPI Assets and SP Ausnet. Thus the uplift given to both issuers from the underlying rating of BBB+ to the rating of A-, due to the SP ownership has been removed and the ratings of both companies have dropped one notch.

Lack of uplift of ratings as the NSPs deleveraged through the period could be masked if the rating agencies become more conservative over the period and expected higher financial metrics.

³⁵ Outlooks are forward looking views made by agencies as to the 12-18 months behavior of the rating. Within that time period the agency will either return the rating to stable, or change the rating either positively or negatively dependent of the outlook.

7.2. Moody's

The change in Moody's rating from 2008 until 2012 is shown in the table below:

Table 17: Change in Moody's ratings from 2008 to 2013

Issuer	Rating end of 2008	Rating end of 2009	Rating end of 2010	Rating end of 2011	Rating end of 2012	Current Rating
SA Power Networks	A3	A3	A3	A3	A3	A3
Powercor	A3	A3	A3	A3	A3	A3
ElectraNet	Baa1	Baa1	Baa1	Baa1	Baa1	Baa1
United Energy Distribution	Baa1	Baa1, Neg	Baa2	Baa2	Baa2	Baa2
ATCO Gas Australia	NR	NR	NR	Baa3	Baa2	Baa2
Envestra	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2
SPI Assets	NR	A3	A3	A3	A3	A3
SP Ausnet Group	A1	A1	A1	A1	A1	A1
Energy Partnership (Gas)	Baa2	Baa2, Neg	Baa3	Baa3	Baa3	Baa3

Most ratings have remained stationary, with exception of United Energy Distribution and Energy Partnership (Gas) which, over the time period have dropped one notch.

This trend is common with that of S&P which does not show a change in the ratings of most DSNPs in the period from 2008 to 2012.

8. **Best Practice Debt Portfolio Management**

I have been asked to comment on the type and term of debt and opine on best practice for the debt management issues facing NSPs.

Rating agencies do not stipulate the debt amount for the capital structure for an issuer. Neither do they counsel issuers on the most appropriate markets for raising debt, nor the term of the debt. However rating agencies are looking for issuers to be conservative in their approach to the debt markets.

Factors which the rating agencies seek in highly rated users are:

- A company with a spread of maturities to its debt, such that only a small proportion of its debt matures within each year;
- Refinance of maturing debt within 6-9 months of its maturity. Early refinancing obviates the risk of the issuer not being able to refinance a tranche of debt if there is a market disturbance when the debt is maturing; and
- Access to liquid funds.

Neither rating agency has published rules concerning debt maturity or refinance. Neither are direct ratings drivers, but both contribute to a well managed company and go towards stronger ratings.

Liquidity is however a significant consideration for rating agencies. The rating agencies take the approach that a company cannot be investment grade without adequate liquidity. In order to be IG an issuer must not only satisfy the long term metrics but must also have acceptable liquidity³⁶. Both agencies measure liquidity by calculating the ratio of the assured cash sources over the next 12-24 months to the cash uses over the same time period. In each opinion each agency has a section on liquidity, in which it describes the sources and uses of cash for the next 12-18 months.

8.1. Standard & Poor's

The agency has recently codified their statements concerning liquidity³⁷ and added five descriptors to describe the liquidity of an issuer – Exceptional, Strong, Adequate, Less than Adequate and Weak. In the publications, S&P states:

“To avoid the risk of default, a company’s liquidity must be sufficiently robust to absorb a moderate level of stress. Accordingly, for a company to receive a rating of ‘BBB-’ or higher, its liquidity must be scored Adequate or stronger.”

Thus IG issuers cannot have Weak liquidity, and a company which otherwise be investment grade will not be if its liquidity is not strong enough.

S&P counts sources of liquidity as cash and liquid investments, FFO from operations, working capital inflows, proceeds of asset sales (when confidently predictable), undrawn, available committed bank lines maturing beyond 12 months and expected ongoing cash injections from a government or corporate member, as appropriate. The sum of all these sources is “A”.

Uses of liquidity are FFO if negative, expected capex, forecast working capital outflows, all debt maturities, any required cash based postretirement employee benefit top-up, credit puts or additional requirements which would be needed were the issuer’s rating to drop three notches and contracted acquisitions and expected shareholder distributions under a stress scenario. These requirements of cash are given the amount “B”

In order to satisfy the Adequate category an issuer must have:

- a ratio of A/B of at least 1.2x for the next 12 months;
- an A/B ratio of at least 1.0x even with a drop in EBITDA of 15%;
- Sufficient covenant headroom to allow the EBITDA to drop 15% without breaching covenants;
- Sound relationships with banks;
- Generally satisfactory standing in the credit markets; and
- Generally prudent financial risk management

³⁶ Methodology and Assumptions: Liquidity Descriptors for Global Corporate Issuers, 28 September 2011

In summary, the attributes above are displayed by the Adequate liquidity company and this is the minimum requirement for an investment grade credit rating.

8.2. Moody's

The agency has a similar approach to liquidity as S&P but it is less formally announced. In my experience a company with inadequate liquidity cannot be IG. As part of the Moody's rating process a Liquidity Risk Assessment (LRA) is conducted to assess the strength of the liquidity of issuers.

In my experience, sources of liquidity are characterised as either Type I, Type II or Type III depending on their ease of access. Type I sources includes cash and cash equivalents, FFO, forecast DRP proceeds and multi-year credit facilities with no MAC clauses. Type II sources includes marketable securities, and Type III sources include multi-year facilities with MAC clauses, tax refunds and assets sales. Uses are similar to that outlines by S&P.

Issuers with Adequate liquidity display the sum of Type I, II and III sources greater than Uses for each of the next four quarters, with the sum of Types I and II being 50% or greater. In general, IG issuers have at least Adequate liquidity, but the rating committee takes account the lack of Adequate liquidity and the plans the issuer has to address the concern. There are thus some IG issuer who display Inadequate liquidity.

9. **Australian Regulatory Regime**

I have been asked to comment on the effect that the change in regulatory regime has on credit ratings and the extent to which varying regulation has an influence on the rating outcome.

Both rating agencies have made comment in recent publications about implications for declining industry credit quality due to rising regulatory risk.

9.1. Standard & Poor's

In a paper in October 2012³⁸, S&P stated that while the "proposed reforms that would provide it [the AER] a wider scope in determining electricity and gas prices. But the greater regulatory flexibility could pose higher credit risks to rated Australian network utilities". The rating agency went on to say that the greater discretion would have a negative effect on the predictability, stability, and transparency of the regulatory regime, compared with the current one. Up until the current time the Business profile has been Excellent and this uncertainty could lead to a diminishment of Business profile to Strong, which according to Table 1 would lead to a two notch downgrade in ratings.

In November 2012³⁹, S&P extended its commentary, saying that although the credit quality for NSPs in Australia should remain stable, "recent draft decisions are not favourable". In particular, changes to the operating cost allowance, WACC and capital expenditure allowance have all been reduced, and as a result "if the network companies are unable to operate within the opex allowance, their financial risk profiles would worsen". In addition S&P stated that "the proposed rule changes are likely to reduce cash flow predictability, and consequently, weaken the credit quality of regulated network utilities".

³⁸ "Australian Network Utilities Face Rising Regulatory Risk Under Draft Reforms, Says S&P Report", 23 October 2012

³⁹ "Australian and New Zealand Network Utilities Maintain Stable Credit Quality", 14 November 2012

9.2. Moody's

Moody's has gone further stating⁴⁰ that the outlook for the Australian regulated utility network sector is negative, due to the increased uncertainty in the regulatory environment following the release of the new rules governing the revenue-setting.

Clearly both rating agencies are concerned about the increased discretion which the AER seeks to impose on the industry, and the associated lack of certainty. If the draft rules were to come to fruition then S&P could decrease the Business profile from Excellent to Strong and Moody's may drop the 1(a) rating sub-factor from Aaa to a lower level. Both of these changes will result in the ratings downgrade.

All the analysis above is predicated on no change in the regulatory stability factors and any downward movement in them will lead to lower rating results.

⁴⁰ "Increased Uncertainty in Regulatory Environment Challenges Sector's Credit Profile", 21 February 2013

Appendix 1: Supporting Tables

Table A: Rating and Financial Credit Metrics for Australian NSPs

Issuer	Date of Publication	Underlying Rating	FFO/Interest Cover	FFO/Debt
SPI Assets	12/2012	A	>3.0x	11%-12%
SA Power Networks	11/2012	A-	3.0-3.5x	15%-16%
Citipower	4/2012	BBB+	~2.5x	~9%
Powercor	4/2012	BBB+	>2.5x	>9%
SPAusnet	4/2013	BBB+	>2.5x	>10%
ATCO Gas Australia	1/2013	BBB, Pos.	2.4x- 2.5x	11%-12%
United Energy Distribution	7/2012	BBB	2.3x-2.5x	9%-11%
ElectraNet	12/2012	BBB	1.7x -2.5x	8%-10%
Envestra	11/2012	BBB-,Pos.	>2.3x	9%
Energy Partnership (Gas)	6/2012	BBB-	1.7x - 1.9x	5% - 8%

Table B: Rating and Financial metrics for Australian NSPs

Issuer	Date of Publication	Underlying Rating	FFO Interest Cover	FFO/Debt
SA Power Networks	9/2012	A3, St	2.6x – 4.0x	12% - 18%
Powercor	8/2012	A3, St	2.6x – 4.0x	12%-20%
SPAusnet	9/2012	A3	2.5x – 4.0x	8%-20%
ElectraNet	4/2012	Baa1, St	2.3x/2.5x – 2.9x/3.0x	6% - 10%
United Energy Distribution	5/2012	Baa2, St	~2.0x - 2.3x/2.5x	-
ATCO Gas Australia	12/2012	Baa2, St	1.8x – 2.7x/2.8x	8% - 12%/15%
Envestra	5/2012	Baa2, St	1.7x – 2.3x/2.5x	-
SPI Assets	11/2012	Baa2	2.0x-2.5x	7%-10%
Energy Partnership (Gas)	5/2012	Baa3, St	1.4x – 1.8x	-

Appendix 2: Details of mapping the Notional NSP to the Moody's methodology

Reasons for choosing the sub-factor mapping:

- 1(a): Aaa: is the same as all other Australian NSPs
- 1(b): Aa: is the same as all other Australian NSPs
- 1(c): A: is the same as all other Australian NSPs
- 1(d): A: All other NSPs in Australia, with the exception of ElectraNet are ranked A on this sub – factor
- 2(a): Aa: Australian NSPs are split between Aaa and Aa on this factor. The difference relates to the performance of the NSP against the regulator assumptions, and Aaa means very high performance and Aa means high performance against the assumptions.
- 2(b): A: The average of the percentage of capex to RAB for the next five years is 7.6%⁴¹. This maps to a 6-8% (A).
- 3(a): A: In common with all other Australian NSPs
- 3(b): Baa: In common with all other Australian NSPs except for ATCO Gas.
- 3(c): A: In common with all other Australian NSPs
- 4(a): Ba: The average of 5 years FFO/Interest Cover is 1.70x⁴² which maps to Ba (1.5x-2.5x)
- 4(b): A: The average of Debt/RAB is 56.1%⁴³ and thus maps to A (45%-60%)
- 4(c): Ba: The average of FFO/Debt is 7.2%⁴⁴ which maps to a Ba (4%-8%)
- 4(d): B: The average of five years is 38%⁴⁵ which maps to B (<50%)

Appendix 2A: Using three year averages

For three year averages:

All sub-factor mapping would be the same except for the following:

- 2(b): The three year average for this factor is 8.01%, which maps the factor to Baa (8%-12%)
- 4(a): Ba: The average of 1.57x is within the Ba range (1.5x to 2.5x)
- 4(b): A: The average of 55.8% is within the A range (45%-60%)
- 4(c): Ba: The average of 5.7% is within the Ba range (4%-8%)
- 4(d): B: The average of 27% is within the B range (<50%)

⁴¹ From lines 594 and 595 of sheet Assets of the Model

⁴² From line 37 of sheet Credit Rating Metrics of the Model

⁴³ Calculated from lines 16 and 20 of Credit Rating Metrics of the Model

⁴⁴ From line 27 of Credit rating Metrics of the Model

⁴⁵ Calculated from lines 97 and 100 of sheet Analysis and lines 23 of Credit Ratings Metrics of the Model

Appendix 3: Curriculum Vitae

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CAREER SUMMARY

Initial degrees, including PhD in geology, followed work in Australia and USA, progressing to financial evaluation of mining industry acquisition targets. Returned to Australia in 1986 and joined Westpac’s project finance team. Started, built and successfully ran the project finance team at NatWest Australia, followed by three years in New York running the debt markets area of NatWest. After two years in London assisting dismantling NatWest Markets and gaining experience in private equity and advice, returned to Australia to start National Australia Bank’s project advisory team. After a short time at National Australia Bank spent six years with Moody’s Investors Service, as a senior analyst specializing in infrastructure – airports, power and toll roads, senior analyst for all Australian and New Zealand rated energy networks. Also responsible for some major Australian and New Zealand corporates – Qantas, Air New Zealand, Mighty River Power, Babcock & Brown Infrastructure and AWB. In May 2008, resigned from Moody’s to start up Kanangra Ratings Advisory Services focusing on advising corporates on relations with rating agencies. Since then has advised companies including Fortescue Metals, ElectraNet, Powercor, Reliance Rail, APA Group and Adelaide Airport on debt and ratings related issues. On the Board of River City Motorway from July 2010 until February 2011.