Distribution credit support regime in the NECF

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Executive summary

The National Electricity Market (NEM) jurisdictions have long made provision for Distribution Network Service Providers (DNSPs) to seek credit support from electricity retailers in respect of the network charges incurred by retailers' end-use customers. The purpose of credit support arrangements is to manage the risk to distributors – and ultimately to electricity consumers – from retailer default leading to the non-payment of network charges.

The original policy principle applied in setting the credit support scheme parameters was to limit the value of unpaid network charges that DNSPs and electricity consumers would have to bear in the event of retail default. However, recent changes to the scheme parameters suggest that the policy has been fundamentally altered. Previously, the scheme parameters were based on an assessment of the maximum risk that distributors and customers would be prepared to bear. However, under the revised scheme, the parameters have been set specifically to avoid obliging a B rated retailer with a given market share to provide any credit support. That is, the policy basis for the scheme parameters is no longer about the risk being faced by distributors; it is about protecting low-rated retailers from having to provide credit support.

The change in policy focus appears to be driven by the intent to encourage the participation of more small retailers (who tend to have relatively low credit ratings). However, the implementation of that policy intent via the credit support scheme produces a number of economic inefficiencies. The credit support scheme is (or should be) about protecting DNSPs and customers from retailer defaults. There are two problems with using this scheme to try to encourage new entrant retailers. First, there are more direct and economically efficient methods for encouraging retail competition – the credit support scheme is a blunt instrument for that purpose. Second, if the objective of the credit support scheme is to foster retailer competition, it will inevitably be less effective in fulfilling its original purpose – protecting DNSPs and customers from retailer defaults.

In relation to the second of these points, the MCE's discussion about default risk (see section 2 of this report) was based on the premise that the revised scheme parameters would have the overall effect of reducing the risk faced by distributors. However, we demonstrate that the reverse is likely to be true. In particular, the revision to scheme parameters acts to shift the burden of credit support from low-rated retailers (who are more likely to default) to investment grade retailers (who are very unlikely to default). The result is that distributors receive relatively more credit support where it is unlikely to be of any use and relatively less credit support precisely where it is likely to be needed. From an economic perspective, this is an inefficient outcome.

Since the revised credit support arrangements are likely to produce outcomes that are not consistent with economic efficiency, we recommend replacing the current credit support arrangements with a 'risk-based' approach. Under such an approach, retailers would be required to provide credit support purely on the basis of their value-at-risk (VaR) and their risk of default, as indicated by their credit ratings. Such a scheme would ensure that credit support is provided where it is needed most (so would be efficient in an economic sense), and would provide appropriate signals for low-rated companies to improve their credit-worthiness over time and to avoid excessive risk-taking. There would be no inherent discrimination against larger retailers or retailers with a large market share in a particular DNSP's area.

If policymakers were to continue to view encouraging 'granularity' of DNSPs' retailer client base as an important objective for the credit support arrangements, we propose both (or at least one) of the following amendments to the existing arrangements:

- Increase the maximum credit support allowance back to 33.33% of a DNSP's annual retailer network charges (as in the Second Exposure Draft); and/or
- Allocate a credit allowance of 100% to retailers rated BBB+ (by S&P).

The first of these amendments recognises that the only reason the credit support allowance parameter was changed from 33.33% to 25% was to implement the policy objective of encouraging new entrant retailers. If that policy objective can be fulfilled through more direct means, so that the focus of the credit support scheme can remain on managing the risk of retailer defaults, the rationale for the change to this parameter disappears.

The second amendment recognises that the original scheme parameters were based on DNSPs and customers being comfortable with a 0.12% chance of default. If they remain comfortable with that probability of default (and there is no evidence to the contrary), it is highly likely that they would currently be comfortable bearing the risk of BBB+ entities – for which the risk of default has fallen to 0.14%.

Both of these modifications are based on the notion that credit support should be proportional to the risk that the retailer creates for the DNSP and customers.

1 Introduction

This report has been prepared jointly by Frontier Economics (Frontier) and SFG Consulting (SFG) for AGL Energy, Origin Energy and Energy Australia to highlight and discuss shortcomings associated with the arrangements for distributor credit support in the National Electricity Market (NEM), and to propose possible improvements to the existing arrangements.

In particular, this report:

- Reviews and analyses the current distribution network service provider (DNSP) credit support scheme operating in the NEM as well as the evolution of the scheme over time (section 2)
- Presents an empirical assessment of changes to credit support scheme parameters and retailer risk profiles (section 3)
- Develops an outline of potential changes to the current credit support arrangements in line with the market objectives (section 4).

This report also contains two appendices:

- Appendix A describes past failures of small energy retailers in the NEM
- Appendix B discusses the risk profile of different energy retailers operating in the NEM.

2 Review and conceptual analysis of current distribution credit support scheme

2.1 Background

The National Electricity Market (NEM) jurisdictions have long made provision for Distribution Network Service Providers (DNSPs) to seek credit support from electricity retailers in respect of the network charges incurred by retailers' end-use customers. This credit support typically takes the form of a bank guarantee, for which retailers will typically pay a fee. The larger the guarantee required, the more costly the credit support to retailers. In a competitive retail market, we would expect these costs to be passed through to customers.

The current credit support provisions for the NEM are contained in chapter 6B of the National Electricity Rules (NER). These provisions supersede the previous jurisdiction-based schemes and reflect the outworkings of the National Energy Customer Framework (NECF) process. The NECF process led to the insertion of chapter 6B in version 51 of the NER in August 2012.

The purpose of credit support arrangements is to manage the risk to electricity customers from retailer default leading to non-payment of network charges.[1] Customers are ultimately exposed to this risk because DNSPs can pass through unrecovered network charges to end-use customers.

2.1.1 Former Victorian credit support arrangements

The former credit support scheme operating in Victoria and several other jurisdictions was based on advice prepared by the Allen Consulting Group (ACG) in 2006 for the Essential Services Commission of Victoria (ESCV).[2] The former Victorian scheme provided the original basis for the deliberations that gave rise to the present arrangements under the NECF.

Under the Victorian scheme, the requirement for a retailer to provide credit support to a DNSP was derived by:[3]

- Subtracting the retailer's average and unbilled Distribution Service liability
- From the retailer's Credit Allowance.

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1 See Ministerial Council on Energy, Standing Committee of Officials Bulletin No. 192.

2 ACG, *Retailer DUoS Credit Support Arrangements, Implementation Issues in Victoria*, June 2006 (ACG report).

3 ESCV, *Credit Support Arrangements, Final Decision*, October 2006, (ESCV Final Decision), pp.3-5.

The retailer's Credit Allowance was a proportion of the DNSP's Maximum Credit Allowance, which represented the maximum exposure of DNSPs (and hence customers) to loss caused by retailer failure.

In Victoria, the relevant parameters were set as follows:[4]

- Maximum unsecured credit allowance – was one-third (33.33%) of the DNSP's annual Distribution Service Charge revenue; and
- Individual credit allowance – was 100% of the maximum unsecured credit allowance for retailers with credit ratings of A- with Standard and Poor's (S&P) and lower for retailers with lower credit ratings. For example, a retailer with an S&P rating of:
  - BBB would have an individual credit allowance of 72% of the maximum unsecured credit allowance; and
  - BB+ would have an individual credit allowance of 13% of the maximum unsecured credit allowance.

Therefore, the higher the maximum unsecured credit allowance, and the higher a retailer's credit allowance percentage, the *less likely* that the retailer would need to provide credit support and the *less support* it would need to provide, all other things being equal.

2.1.2 NECF arrangements

The credit support arrangements introduced pursuant to the NECF process were modelled on the Victorian scheme. As late as the Second Exposure Draft of the *Draft National Electricity (Retail Support) Amendment Rule* 2010, the key proposed credit support parameters were identical to those the former Victorian arrangements.

In particular, under the Second Exposure Draft:

- A DNSP's *maximum credit allowance* (as defined under the Victorian arrangements) was 33.33% of its total annual network charges.[5]
- Each retailer's *credit allowance percentage* (defined as Credit Allowance under the Victorian scheme) was to fall in line with its credit rating to the same extent as under the Victorian scheme.[6]

4 ESCV Final Decision, p.4.

5 Draft Rule 6B.6.2.

6 Draft Rule 6B.6.1 and Schedule 1.

Several credit support parameters were changed in the subsequent Amendment Rule as follows:[7]

- A DNSP's maximum credit allowance was reduced to 25% of its total annual network charges; and
- For retailers with:
  - investment grade ratings (S&P rated BBB- or above), the retailer's credit allowance percentage was *reduced*
  - lower than investment-grade credit ratings, the credit allowance percentage was *increased*.

The table below outlines the changes to retailers' credit allowance percentages.

Table 1: Changes to retailer credit allowance percentages

S&P rating	Second Exposure Draft credit allowance percentage	Amendment Rule credit allowance percentage
AAA to A-	100	100
BBB+	90	52.9
BBB	72	37.5
BBB-	48	22
BB+	13	17
BB	7	11
BB-	4	6.7
B+	2	3.3
B	1.1	1.4
B-	0.4	0.9
CCC to CC	0.1	0.3

Source: Schedule 6B.1 of National Electricity (Retail Support) Amendment Rules 2010 from the Second Exposure Draft and the actual Amendment Rule.

The table shows that the Amendment made highly-rated retailers worse off and made low-rated retailers slightly better off than under the previous Victorian scheme parameters.

7 *National Electricity (Retail Support) Amendment Rules* 2010.

These changes were outlined briefly in the Ministerial Council on Energy's (MCE's) Bulletin 192, which accompanied the NECF changes to the NER. We understand that the changes have been based on advice prepared by consultants, PwC. The principal author of that was formerly the author of the 2006 ACG report for the ESCV.

We have a number of concerns with the NECF changes to the credit support provisions in the NER. These concerns arise from our understanding of the objectives of credit support arrangements in the NEM and the justification that was provided for the changes.

The remainder of this section proceeds as follows:

- Section 2.2 outlines the key parameters and operation of the current credit support scheme in chapter 6B of the NER
- Section 2.3 discusses our analytical framework for evaluating the development of the NEM credit support arrangements
- Section 2.4 focuses on analysing the original Victorian scheme
- Section 2.5 analyses the NECF-associated changes to the credit support arrangements.

2.2 Current credit support scheme

The existing scheme begins with the specification of the **maximum unsecured credit allowance**. This is the amount of credit that would be allowed to a retailer with a credit rating of A- or better before it must provide credit support. For example, if the maximum unsecured credit allowance was set to $100 and a retailer with an A- rating had credit outstanding of $110, that retailer would have to provide credit support of $10.

It is important to note that the maximum unsecured credit allowance applies to each retailer. For example, if the allowance is set at 33% of annual revenue and the distributor serves three retailers that are all rated A- or better, each will receive a 33% allowance such that 99% of the distributor's annual revenues remain unsecured.

The maximum unsecured credit allowance is selected as a policy variable. It is an assessment of the maximum quantum of risk that the distributor (and ultimately consumers) would be prepared to bear – from each individual retailer – without requiring credit support, given that the retailer was rated A- or better. For instance, in the example above, the maximum unsecured credit allowance of 33% is set as a policy variable based on the assessment that the distributor (and consumers) would be prepared to have a maximum of 33% of annual revenue at risk (i.e., unsecured) with a retailer that has a credit rating of A- or better.

An **individual unsecured credit limit** is computed for each retailer as a function of the retailer's credit rating. Specifically, each retailer is assigned a **credit allowance percentage** that is multiplied by the maximum unsecured credit allowance. For example, if a retailer has a credit allowance percentage of 90% and the maximum unsecured credit allowance has been set at $100, the retailer would have an individual unsecured credit limit of $90.

The individual unsecured credit limit is designed to maintain the expected loss (in relation to each individual retailer) that was set as a policy variable when determining the maximum unsecured credit allowance in the previous step. For example, suppose the maximum unsecured credit allowance had been set to 33% of the annual revenue of $300. In this case, the maximum unsecured credit allowance is $100. With an A- one-year default probability of 0.12%[8], this represents an expected loss of:

$$0.12\% \times 100 = \$0.12 .$$

Now consider a retailer with a lower rating that implies a one-year default probability of 0.20%. In this case, the same expected loss would result from a credit exposure of $60:

$$0.20\% \times 60 = \$0.12 .$$

The retailer in this case would be assigned a credit allowance percentage of 60% of that for a retailer with an A- rating. In general the credit allowance percentage can be computed as:[9]

$$Credit\ Allowance\% = \frac{Probability\ of\ default\left(A-\right)}{Probability\ of\ default\left(Lower\ rating\right)}$$

In the example above, the lower-rated retailer would be assigned an individual unsecured credit limit of $60 and would have to provide $40 of credit support. Under this scheme, any amount that is backed by credit support is considered implicitly to be risk-free such that there is no chance of default. Thus, the expected default amount is the product of the unsecured amount and the default probability. This assumption is made even though the entity providing the credit support may, itself, only have an A- rating and therefore not be completely risk-free.

The ACG report set out a table of credit allowance percentages for a range of credit ratings.[10] These figures should be based on the one-year default rates reported by Standard and Poor's at the time of that report. However, the ACG

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8 That is, the probability of an A- entity defaulting within the next year is 0.12%.

9 See letter from Jeff Balchin, PwC, to Chair, Energy Market Reform Working Group, dated 20 April 2012 (PwC report), p.3.

10 ACG report, Table 4.1, p. 24.

calculations were materially incorrect, with corrected figures being supplied in the later PwC report.[11] The PwC report also set out credit allowance percentages based on updated one-year default rates reported by S&P in 2010. The PwC figures are reproduced in Table 2 below.

Table 2: Credit allowances for firms by credit rating

S&P rating	Probability of default (2006)	Probability of default (2010)	Credit Allowance (% of MCA)		
			Victorian parameters	Corrected: 2006 data	Corrected: 2010 data
AA	0.00	0.02	100.0%	100.0%	100.0%
A	0.04	0.09	100.0%	100.0%	100.0%
A-	0.12	0.09	100.0%	100.0%	100.0%
BBB+	0.20	0.17	90.0%	60.0%	52.9%
BBB	0.30	0.24	72.0%	40.0%	37.5%
BBB-	0.40	0.41	48.0%	30.0%	22.0%
BB+	0.60	0.53	13.0%	20.0%	17.0%
BB	1.00	0.82	7.0%	12.0%	11.0%
BB-	1.80	1.34	4.0%	6.7%	6.7%
B+	3.00	2.70	2.0%	4.0%	3.3%
B	8.35	6.26	1.1%	1.4%	1.4%
B-	12.20	9.86	0.4%	1.0%	0.9%
CCC to CC	28.80	27.98	0.1%	0.4%	0.3%

Source: PwC report, Table 2, p.4.

One of the key features of Table 2 is that the one-year default probability corresponding to an A- credit rating fell from 0.12% to 0.09%. This then becomes the reference point against which all credit allowance percentages are based. Consequently, even though the reported one-year default rates generally fell between 2006 and 2010 (e.g. the BBB default rate fell from 0.30% to 0.24%), the decline in the A- default rate (from 0.12% to 0.09%) was generally proportionally higher. This resulted in credit allowances generally falling between

11 PwC (2012), Table 2, p. 4.

2006 (corrected) and the current figures (e.g. for a BBB retailer, the credit allowance percentage declined from 40.0% to 37.5%).

The individual unsecured credit limit is the product of the maximum unsecured credit allowance (for a retailer with a credit rating of A- or above) and the credit allowance percentage from the table above. For example, if the maximum unsecured credit allowance is $100 and the credit allowance percentage is 60%, the retailer in question will have an individual unsecured credit limit of $60.

Credit outstanding is defined in terms of the retailer's market share, total revenue for the relevant distributor and the number of days, on average, between the provision of the network service and payment by the retailer:

$$Credit\ \ outstanding = \frac{Days}{365} \times Market\ \ share \times Distributor\ \ annual\ \ \ revenue$$

Consider a retailer who has a 25% share of the market in which a distributor has annual revenues of $400. If that retailer pays, on average, 90 days after the provision of the relevant network service, the credit outstanding for that retailer would be:

$$Credit\ outstanding = \frac{90}{365} \times 25\% \times \$400 = \$24.7.$$

If a retailer's credit outstanding exceeds its individual unsecured credit limit, the retailer would have to provide **credit support** for the difference:

$$Credit\ \ support = \max\left(Credit\ \ outstanding - Individual\ \ unsecured\ \ support\ \ limit, 0\right).$$

The PwC report noted that for a given set of scheme parameters and retailer credit rating, it is possible to solve for the maximum market share that does not require any credit support. Specifically, the PwC report shows that the maximum market share not requiring credit support is: [12]

$$Market\ \ share = \frac{Maximum\ \ \ unsecured\ \ credit\ \ allowance\ \% \times Individual\ \ credit\ \ allowance\ \%}{Days \Big/ 365}$$

The PwC report shows the maximum market shares that do not require credit support in a table that is reproduced as Table 3.

12 PwC report, p. 6.

Table 3: Maximum market share not requiring credit support

S&P rating	Victorian parameters		2010 data, corrected calculations					
			MCA = 33% x Dist Rev		MCA = 70% x Dist Rev		MCA = 25% x Dist Rev	
	90 days	73.5 days	90 days	73.5 days	90 days	73.5 days	90 days	73.5 days
AA	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
A	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
A-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
BBB+	100.0%	100.0%	70.9%	86.8%	100.0%	100.0%	53.7%	65.7%
BBB	96.4%	100.0%	50.2%	61.5%	100.0%	100.0%	38.0%	46.6%
BBB-	64.2%	78.7%	29.4%	36.0%	62.3%	76.3%	22.3%	27.3%
BB+	17.4%	21.3%	22.7%	27.8%	48.2%	59.0%	17.2%	21.1%
BB	9.4%	11.5%	14.7%	18.0%	31.2%	38.2%	11.1%	13.6%
BB-	5.4%	6.6%	9.0%	11.0%	19.1%	23.3%	6.8%	8.3%
B+	2.7%	3.3%	4.5%	5.5%	9.5%	11.6%	3.4%	4.1%
B	1.5%	1.8%	1.9%	2.4%	4.1%	5.0%	1.5%	1.8%
B-	0.5%	0.7%	1.2%	1.5%	2.6%	3.2%	0.9%	1.1%
CCC to CC	0.1%	0.2%	0.4%	0.5%	0.9%	1.1%	0.3%	0.4%

Source: PwC report, Table 2, p.4.

The PwC report corrected for the errors in the ACG report calculations and updated for more recent default probabilities. PwC then went on to back-solve for the maximum credit allowance percentages that would result in the same outcomes that would be obtained under the erroneous and out-dated ACG report calculations. In particular, PwC showed (see shaded cells in table above) that:

- If the maximum credit allowance percentage were changed from 33% to 70%, the maximum market share before a BBB- retailer would be required to provide credit support is approximately the same as under the old scheme;[13] and

[13] Note that for a 90-day payment cycle only 25% of annual revenues will be outstanding at any point in time. Consequently, setting the maximum credit allowance to 70% may appear to be redundant. But recall that the maximum credit allowance is multiplied by the retailer's individual credit allowance, which is based on its credit rating. The combination of these two values becomes a

- If the maximum credit allowance percentage were changed from 33% to 25%, the maximum market share before a B rated retailer would be required to provide credit support is approximately the same as under the old scheme.

Even framing the issue in this way indicates that the PwC approach represents a fundamental revision of the policy basis for the scheme parameters. Recall from above that the key policy variable in the original scheme was the selection of the value of 33% for the maximum credit allowance. This figure was selected on the basis of a policy assessment that distributors (and ultimately, electricity consumers) would be prepared to bear the risk (with no credit support) that a retailer with an A- rating would default (within one year) on payments up to 33% of the distributor's annual revenue. Consider, for example, a distributor with annual revenues of $100. The policy determination that was made for the original scheme was that the distributor would be prepared to bear a 0.12% risk (the A- default probability) that an individual retailer would default on $33 of payments during the course of the year. There were two elements to this policy choice – the assessment that the distributor would be prepared to bear a 0.12% chance of default, and the assessment that the distributor would be prepared to have 33% of annual revenue subject to this risk with each retailer.

The two options considered by PwC both involve fundamental changes to this key policy variable, without any proper explanation. That is, there was no discussion of why, having previously determined that distributors would be prepared to bear a quantum of risk of 33% of their annual revenue, they would now be prepared to bear a quantum of risk of 70% or 25%. Moreover, no evidence was presented to suggest that there is any reason to believe that there had been any change in the quantum of risk that distributors would be prepared to bear – or about whether any such change may have been up or down. In our view, the key policy variable of 33% should not have been changed without explanation of why policy-makers considered that there had been a change in the quantum of risk that distributors are willing to bear.

Later in this report, we discuss in more detail the PwC recommendation that the maximum credit allowance be revised from 33% to 25%. The reason for this change was to maintain the maximum market share before a B rated retailer would be required to provide credit support. Under the previous scheme, a B rated retailer with market share less than 1.5% would not have had to provide any credit support. Under the revised scheme, this is preserved by back-solving for the appropriate maximum credit allowance.

In summary, the policy principles applied to the setting of the scheme parameters have been fundamentally altered. Previously, the scheme parameters were based

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binding constraint for any individual credit allowance below 25/70=36%, which is the case for all ratings of BBB- and below under the revised parameters.

on an assessment of the maximum risk that distributors and customers would be prepared to bear. For the revised scheme, however, the parameters have been set specifically to avoid obliging a B rated retailer with a given market share to provide any credit support. That is, the policy basis for the scheme parameters is no longer about the risk being faced by distributors; it is about protecting low-rated retailers from having to provide credit support.

In summary, the revision to the scheme is not a simple updating to reflect new data – it involves a fundamental revision of the policy principles for the setting of the scheme parameters :

- From: setting parameters to bound the default risk faced by distributors
- To: ensuring that low-rated retailers can reach a certain market share before they are required to provide credit support.

We explain below how the revised scheme parameters have the effect of increasing the default risk borne by distributors.

2.3 Analytical framework

Our review and analysis of the Victorian scheme and the existing (NECF) distributor credit support arrangements is based on the framework articulated in this section.

2.3.1 Role of economic efficiency within the National Electricity Law

Changes to credit support arrangements need to be justifiable under the National Electricity Objective (NEO). The NEO emphasises the need to promote efficient investment in, and efficient operation and use of, electricity services for the long term interest of consumers, with respect to matters such as price, security, reliability and safety.[14] The AEMC is only able to make rules for electricity that will or are likely to contribute to the achievement of the NEO.[15]

The overriding consideration under the NEO is economic efficiency, constrained by the need to ensure that:

- security, reliability and safety priorities are satisfied; and
- in the long run, cost savings can be passed on to consumers through lower prices.

14 NEL, section 7.

15 NEL, section 88.

Economic efficiency is often described as having three dimensions. These are:[16]

- Productive efficiency: minimising the use of inputs to produce a given level of output, or maximising the quantity of output for a given volume of inputs.
- Allocative efficiency: allocating inputs and outputs in such a way that maximises the total social welfare (i.e. the sum of consumer and producer surplus).
- Dynamic efficiency: maximising the sum of consumer and producer surplus over time, such as through the encouragement of appropriate entry/exit and investment decisions as well as the promotion of welfare-enhancing technological change and innovation.

We note that the NEO does not treat the promotion of retail competition as an end in itself. The NEO also does not refer to the minimisation of DNSPs' risks or the variance in customer bills. To the extent these goals drive changes to the NEM, it must be as a means of promoting the achievement of the NEO.

2.3.2 Economic efficiency justification for credit support

There are sound economic efficiency grounds for the imposition of *some* degree of distributor credit support requirements through the NER. As regulated local natural monopolies, DNSPs are required to provide network services to all registered retailers and their customers. DNSPs must take retailers 'as they come' and cannot refuse to convey power to the customers of retailers that appear financially unstable. This point was made in the explanatory material accompanying the Second Exposure Draft.[17] Through pass-through provisions in the NER,[18] end-use customers effectively bear the costs of retailer financial failure. The imposition of regulated credit support arrangements thus helps to substitute for the inability or lack of incentive of DNSPs, acting in part as the agents of end-use customers, to:

(i) choose not to serve retailers that appear risky or financially unviable; or

(ii) negotiate credit requirements in a way that they could seek to do in a competitive market.

In the absence of the credit support rules, retailers would have little or no incentive to concern themselves with the consequences to DNSPs (and, ultimately, retail customers) of risk-taking that results in retailers failing. The

16 See, for example, AEMC, *Transmission Frameworks Review, Directions Paper*, 14 April 2011, p.98.

17 MCE Standing Committee of Officials, *National Energy Customer Framework, Second Exposure Draft, Explanatory Material*, November 2009, para 65, p.11.

18 Rule 6.6.1.

imposition of credit support in the NER reinstates the incentives for retailers to care about their financial stability and to avoid unnecessary risks, as would occur in a well-functioning unregulated market. In other words, a well-designed credit support scheme would have the ability to internalise a cost that would be borne by parties other than the retailer.

Nevertheless, it is important that the credit support provisions in the NER are not unnecessarily onerous. Excessive requirements for credit support or requirements that are biased against larger retailers can harm economic efficiency in the NEM in a number of ways:

- Excessive credit support requirements in general can harm:
  - Allocative inefficiency – as noted above, the costs of the credit support scheme are ultimately passed through to retail customers. Consumers would consume less electricity at the margin than they would if tariffs were cost-reflective. This would lead to an overall loss of welfare to society as a whole; and
  - Dynamic inefficiency – manifesting in under-investment in electricity provision and over-investment in other sectors of the economy.
- Credit support requirements that are biased against larger retailers can harm:
  - Productive inefficiency – due to small retailers' higher costs to serve;
  - Allocative efficiency – due to small and large retailers' customers paying tariffs that do not reflect those retailers' underlying costs; and
  - Dynamic inefficiency – due to the expansion, over time, of smaller inefficient retailers and the contraction of larger more efficient retailers.

2.4 Analysis of original Victorian scheme parameters

As noted above, the previous Victorian credit support scheme was informed by the ACG report. This sub-section discusses the objectives adopted in that report and the key characteristics of the credit support scheme options that were considered by ACG.

2.4.1 Objectives

The ACG report described the objectives that credit support arrangements should seek to meet:[19]

- Minimise the risk of serious financial harm to distributors in the event of a retailer failing;

19 ACG report, p.11.

- Provide an incentive for retailers to reduce their risk profile, particularly as they increase in size, by relating directly any security they are required to post to their credit rating;
- Provide an incentive for distributors to monitor the credit risk of the retailer counterparties and to act promptly to minimise losses and hence the amount of pass-through to end customers; and
- Reduce the barrier to entry faced by small entrant retailers, which pose little material risk to distributors (and ultimately customers).

These objectives were not justified by reference to the NEO.

We discuss briefly the relevance of the objectives identified in the ACG report below.

Risk of serious harm to distributors

While the provision of credit support can reduce the risk exposure of distributors, the cost pass-through provisions in the NER limit DNSPs' ongoing exposure to retailer insolvencies. DNSPs' financial exposures to retailer failure are limited to relatively short term calls on liquidity prior to pass-through amounts being allowed by the AER when it determines the regulated revenues of the DNSPs. The question is whether these liquidity risks should be the responsibility of retailers given that DNSPs would be assured of ultimately recovering the shortfall from a retailer's failure.

Incentive for retailers to reduce their risk profile

While it makes sense for a retailer's required level of security to rise in step with that retailer's size and with lower credit ratings, it is less clear that the required level of credit support should increase *disproportionately* with retailer size, as it does under the current credit support scheme and did under the former Victorian scheme. Given that end-use customers will ultimately pay the DNSP charges not recovered due to retailer insolvency, the issue is the extent to which customers are likely to be willing to tolerate higher future network charges in the event of a large retailer failure.

Incentive for distributors to monitor retailer credit risk

As regulated monopolies, DNSPs should focus on providing network services to all retailers in a non-discriminatory manner. DNSPs are not particularly well-placed to monitor retailer credit risk. However, leaving DNSPs with some degree of exposure to retailer insolvency would provide them with incentives to act promptly to minimise their (and ultimately, customers') losses arising from retailer default. Under the current pass-through arrangements, DNSPs retain at least some short term liquidity exposure to retailer failure.

Reduce small retailer barriers to entry

The credit support rules should focus on the question of who is best able to manage the risk of retailer failure. The choice is fundamentally whether:

- Retailers should provide credit support, which would effectively increase retail tariffs and force customers to pay a form of 'insurance' against retailer failure; or
- Customers should 'self-insure' against such risks by enjoying lower retail tariffs prior to and in the absence of any retailer failure but pay higher network charges if and when retailers fail and leave DNSP bills unpaid.

The history of retailer performance in the NEM to date suggests that retailer failure is extremely rare.[20] This – combined with the relatively small impact on customers of a failure if it occurs – suggests that it is likely to be more efficient for customers to self-insure against the risk of retailer failure than to effectively pay an ongoing insurance premium through higher retail tariffs in order to limit follow-on increases in network tariffs should a retailer fail.

In this context, it is unclear why the credit support arrangements should discriminate in favour of small retailers. Retailers, small or large, should compete on their merits. A discriminatory credit support scheme could encourage the entry of 'weak challengers' who have a tendency to go bust easily. Competition of this sort is unlikely to be very sustainable, and probably just introduces instability. This is not the type of competition that is likely to be of long-term benefits to consumers.

2.4.2 Credit support options

The 2006 ACG report examined three broad options for a credit support scheme:

- Ofgem's credit support approach
- ACG's 'Modified Ofgem' approach
- The 'No Credit Allowance' approach.

These options are discussed below.

Ofgem and Modified Ofgem approaches

The Ofgem and Modified Ofgem approaches were both based on the principle of limiting a DNSP's exposure to financial loss, rather than providing retailers with the appropriate incentives to limit risky behaviour. An implication of both

[20] The only clear failure to date was Jackgreen in December 2009. EnergyOne may have effectively failed in June 2007. See AEMC, *NEM financial market resilience, Issues Paper*, 8 June 2012, Appendix A, pp.46-49.

approaches is that retailers are penalised for having a high share of customers in any given distribution service area and value is attached to encouraging greater 'granularity' of a DNSPs retailer client base.[21] This means that all other things being equal, large retailers are penalised compared to small retailers.

Both the Ofgem and Modified Ofgem approaches involved determining a potential 'unsecured credit allowance' for each retailer. This was set as a proportion of each DNSP's 'maximum unsecured credit allowance', which was determined on the basis of DNSP characteristics rather than any retailer's characteristics. The Ofgem approach set the maximum unsecured credit limit as 2% of the relevant distribution company's regulated asset value (RAV), based on an assessment basis that this was the maximum amount of loss that distributors could absorb. Under the Modified Ofgem approach, the maximum unsecured credit allowance was instead set at 33% of a DNSP's annual distribution use of system (DUoS) revenues. This was, in ACG's opinion:

> ...the maximum amount of loss... that customers are willing to bear at a minimal risk (i.e. a risk of 0.12% or less)."[22]

The analysis supporting this opinion was limited to ACG's calculation that given one-third of an average distributor's annual revenue of $79.7 million, a 0.12% probability of default (based on an S&P credit rating of A-)[23] implied an expected value of default of $95,600. In ACG's view, this was "immaterial when spread over the whole customer base."[24] The arbitrariness of the choice of $95,600 expected loss for an average DNSP is particularly relevant when examining the recent (NECF-associated) changes in the credit support regime parameters (section 2.5 below).

The next step under both approaches was to calculate each retailer's individual unsecured credit allowance. This was based on the retailer's credit rating, with a lower rating entitling the retailer to a smaller share of the potential maximum unsecured credit limit. The ACG report observed that the calculation of the individual unsecured credit limits under the Ofgem approach was influenced heavily by the then-new Basel II framework for banks.[25] ACG considered that adoption of the Ofgem parameters would be inappropriate in the Victorian context for a number of reasons:[26]

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21 ACG report, p.25.

22 ACG report, p.23.

23 ACG report, p.23.

24 ACG report, p.23.

25 ACG report, pp.15-16.

26 ACG report, pp.16-19.

- It would grant a retailer with an S&P rating of BBB+ only 20% of the maximum credit allowance, despite such a retailer having a still very small risk of default (then, 0.2% pa). ACG said this "...does not seem proportionate to the risk [such a retailer] represents"[27]
- It would lead to steep increases in required credit support as a retailer's credit rating fell below AA, but very little increase in credit support as retailer ratings fell below BBB+, which was still above investment-grade.
- The Basel II framework developed for banks did not reflect the fallback of a pass-through if counterparties default, as DNSPs enjoy in the NEM. In addition, we would note that the failure of electricity retailers does not raise the same issues of systemic risks as the failure of financial institutions. This means that the potential losses in electricity are much smaller and more contained.

Under its proposed Modified Ofgem approach, ACG contended that a retailer with a 0.12% probability of default (rated at A- by S&P) deserved a high unsecured credit allowance of one-third of a distributor's revenue. ACG then proceeded to determine the individual unsecured credit limit for retailers with lower credit ratings and higher probabilities of default on the basis of the same expected value of default as for an A- rated retailer. This resulted in the individual credit allowances set out in Table 4.

Table 4: ACG's Modified Ofgem approach

S&P rating	Credit allowance percentage	Unsecured credit allowance % (based on 33.33% maximum)
AAA to A-	100	33.3
BBB+	90	30
BBB	72	24
BBB-	48	16
BB+	13	4.4
BB	7	2.3
BB-	4	1.2
B+	2	0.8
B	1.1	0.4

27 ACG report, p.17.

S&P rating	Credit allowance percentage	Unsecured credit allowance % (based on 33.33% maximum)
B-	0.4	0.2
CCC to CC	0.1	0.04

Source: ACG report, Table 4.1, p.24.

'No credit allowance' approach

The ACG report also considered an alternative approach called the 'no credit allowance' approach. This was based on choosing a 'point of reference' percentage expected loss that customers were considered to be comfortable bearing. At this point of reference, no credit support was imposed. ACG defined the point of reference by reference to a retailer with a bare investment-grade credit rating of BBB- (as rated by S&P). Such a retailer would have a default risk of 0.4% per annum. This meant that in ACG's view, customers would be comfortable with an expected loss of 0.4% of the value-at-risk (VaR) attributable to such a retailer. Under the no credit allowance approach, the mechanism of credit support would be used to ensure that customers would face the same expected percentage of lost VaR in respect of retailers with lower credit ratings and higher risks of default than the point of reference retailer.

For example, with a retailer with a credit rating of BB+ (slightly below BBB-), the probability of default would rise to 0.6%. This would require the retailer to provide credit support of $33.33 for every $100 of VaR to maintain the (expected) position of customers to what it would be if the retailer had a BBB- credit rating.

Based on the then-prevailing default risks for different S&P credit ratings, the ACG report provided the corresponding required levels of credit support, as replicated in Table 5.

Table 5: ACG's No Credit Allowance approach

S&P rating	Default probability %	Credit support as % VaR	Expected value %
BB+	0.6	33.3	99.6
BB	1	60	99.6
BB-	1.8	77.8	99.6
B+	3	86.7	99.6
B	8.3	95.2	99.6
B-	12.2	96.7	99.6

S&P rating	Default probability %	Credit support as % VaR	Expected value %
CCC to CC	28.8	98.6	99.6

Source: ACG report, Table 4.2, p.27.

2.4.3 Modified Ofgem option implemented

The ESCV ultimately adopted the Modified Ofgem option. The reasons provided by the ESCV in favour of this option were that it provided:[28]

- The best balance between:
  - The costs imposed on retailers – of providing credit support;
  - The potential impact on competitive market entry – the Modified Ofgem option removes or lowers the requirement to provide credit support for those retailers who do not pose a significant risk to a distributor either because they have an investment grade credit rating or the proportion of a distributor's revenue that the retailer represents is low; and
  - The benefit of managing the risk to DNSPs of the non-payment of distribution network charges – because those retailers who pose a real risk to the distributor (either because credit rating declines or it begins to represent a significant proportion of the distributor's annual revenue) are required to provide (a higher level of) credit support.
- An incentive for all retailers (large and small) to improve their credit ratings.

Having decided on this system design, the ESCV needed to select, as a policy parameter, the level of risk that it considered distributors (and ultimately consumers) would be willing to bear. The ESC determined that the two aspects of default risk that distributors and customers would be willing to bear were:

a. A one-year default probability of 0.12% (that which applied to A-retailers at the time); and

b. A maximum quantum at risk (for each retailer) of 33% of annual DUoS.

28 ESCV Final Report, pp.9-10.

2.5 Analysis of NECF-associated changes

2.5.1 Explanation of changes

As noted above, the key changes to the NECF credit support arrangements taking place between the Second Exposure Draft and the 2010 Amendment Rule were as follows:

- For retailers with:
  - investment grade ratings (S&P rated BBB- or above), the retailer's credit support allowance percentage was *reduced*
  - lower than investment-grade credit ratings, the credit support allowance percentage was *increased*.
- A DNSP's *maximum credit allowance* was reduced from 33.33% to 25% of its total annual network charges

The analysis supporting the changes appears to have been based on advice prepared by consultants, PwC. The PwC report explained the reasons for the two changes described above as follows:[29]

- **Credit support allowance changes** – these changes were attributable to the following two factors:
  - Correcting an error in the calculations in the ACG report for the Victorian credit support scheme. The error involved under-stating the riskiness (according to 2006 default parameters) of retailers with credit ratings lying between BBB+ and BBB- (inclusive) and over-stating the riskiness of retailers with credit ratings of BB+ and below. This resulted in a realignment of credit allowance percentages, reducing investment grade allowances and increasing sub-investment grade allowances.
  - Updating the previous (2006) probabilities of default of firms with different credit ratings with 2010 data. This also served to reduce investment grade credit allowances and increase sub-investment grade credit allowances.
- **Maximum credit allowance reduction**: In light of the above changes to credit allowance percentages, if the maximum credit allowance percentage had been left unchanged at 33.33%, it would have dramatically reduced the need for sub-investment grade retailers to provide credit support. Reducing the percentage to 25% left such retailers largely unaffected. However, reducing the percentage increased the need for higher-rated retailers to provide credit support – or more precisely, it lowered the revenue threshold

29 PwC report, pp.3-5.

and, therefore, the level of market share they could achieve before needing to provide credit support.

In summary, the changes to the scheme's policy parameters were:

a. The one-year default probability was changed from 0.12% to 0.09% (based on updated empirical evidence published by Standard and Poor's); and

b. The maximum quantum at risk (for each retailer) was changed from 33.33% of annual DUoS to 25% of annual DUoS.

Under the original scheme parameters, B rated retailers could obtain a 1.5% market share before they were required to provide any credit support. The revised parameters were selected to maintain this figure.

The Ministerial Council on Energy Bulletin that accompanied the changes did not provide any further justification for the changes that realigned retailers' credit allowance percentages.

However, on the issue of the maximum credit allowance, the MCE made the following comments:

> It was considered, however, that in the light of changes in the broader economy due to the global financial crisis, and more volatile energy market conditions as signalled by both the occurrence of National Electricity Market administered prices and the increased number of spot price events above $5,000 per MWh, it would be inappropriate to substantially reduce the level of insurance that distributors hold against the risk of default by lower rated retailers. Instead a solution was adopted which enhances the protection of end users against default events generally. To this end, the MCA was altered from 33% of a distributor's total annual retailer charges (as proposed in the second exposure draft) to 25%, which reduces the MCA available and has the effect of requiring credit support to be provided by retailers with a smaller market share than would otherwise be the case.
>
> While this will have the effect of requiring retailers in some distribution areas to provide credit support where previously they have not done so (with associated costs), this must be weighed against the ultimate costs borne by customers in the event of a retailer default.
>
> It is noted that a lower MCA is compatible with a maturing market, where retailer market share is increasingly evenly spread. The credit support arrangements provide a positive incentive on retailers to spread their customer base as widely as possible rather than become geographically concentrated. This reduces the cost of the regime while moderating risk to customers and promoting competition in the energy markets.

This statement suggests that the revised scheme would have the effect of generally increasing the amount of credit support provided by retailers, thereby reducing the default risk borne by distributors (and ultimately customers). However, we show in the following section that the complex interaction between scheme parameters results in the revised scheme having the opposite effect – *increasing* the default risk borne by distributors. That is, relative to the original scheme, the revised scheme results in a transfer of risk from small low-rated

retailers (or those that provide credit support to them) to distributors and consumers.

The statement also suggests that at least an ancillary objective of the most recent amendments was to promote competition in energy markets. However, as shown below, this comes at the expense of increasing default risk for distributors.

2.5.2 Analysis of changes

The key point that emerges from the ACG and PwC reports is that determining the amount of credit support retailers are obliged to provide under the Ofgem and Modified Ofgem approaches involves two separate policy judgements:

- Quantum at risk: The first judgement involves determining the appropriate level of customer exposure to retailer failure. Under both approaches, the dollar value of exposure of customers in a given distribution area is fixed as a proportion of the relevant DNSP's annual DUoS revenue (initially, 33.33% and subsequently reduced to 25%).
- Acceptable probability of default: The second judgement involves determining the probability of retailer default (as indicated by credit rating) at which customers are assumed to be willing to tolerate the loss of their total exposure:
  - Under the Ofgem approach, this was an S&P retailer credit rating of AA; and
  - Under the Modified Ofgem approach, this was an S&P retailer credit rating of A-, where the one-year default probability at the time was 0.12%

Under the so-called 'no credit support' approach, only one policy decision is involved: customers are assumed to be comfortable bearing an expected percentage loss of the VaR attributable to a retailer that is equivalent to the expected percentage loss of the VaR attributable to a retailer with a bare investment-grade credit rating (S&P rated BBB-).

The remainder of this sub-section examines the PwC and MCE rationales for the changes to the NEM credit support arrangements that occurred through the NECF process.

Total exposure of customers

On the total exposure of customers to retailer failure, the PwC report did not provide any justification for reducing the exposure of customers from 33% of a DNSP's annual DUoS to 25% other than that it would ensure that retailers with lower credit ratings were left largely unaffected by the changes.[30]

30 PwC report,

The Ministerial Council on Energy's justification for the reduction was two-fold:

- First, given the changes wrought by the global financial crisis (GFC) and a higher number of NEM wholesale spot price incidents above $5,000/MWh, it would be inappropriate to reduce the obligations of retailers to provide credit support. Therefore, the maximum credit allowance needed to be reduced to ensure that smaller and riskier retailers did not have a reduced obligation to provide credit support despite the lower probabilities of default for such retailers in 2010 compared with 2006.
- Second, a lower maximum credit allowance was appropriate to a more mature market in which retailers' customers were more evenly spread across DNSP areas. This would reduce the cost of the obligation and promote competition in retail energy markets.

In our view, these justifications for a reduced maximum credit allowance are either weak or are no longer valid.

Global Financial Crisis and frequency of price spikes

There was no discussion in the MCE Bulletin of how or why the GFC had or would change the policy basis for credit support in a way that would not be captured by changes to retailer credit ratings or the default risks associated with different credit ratings. In any case, the GFC had a relatively short term effect in Australia and it has now been five years since the crisis reached its zenith. Accordingly, the ongoing relevance of the GFC to the credit support scheme settings is questionable.

On the issue of price spikes, the AER has observed that the incidence of spot prices above $5,000/MWh across the NEM has diminished greatly since 2009/10.[31] Only one such incident was recorded in 2011/12 and four in 2012/13. This compares to over 90 in 2009/10 and over 20 in 2003/04 immediately following the increase in the market price cap from $5,000/MWh to $10,000/MWh. In short, there is strong evidence that retailer wholesale market risk has fallen dramatically in recent years. Furthermore, the likelihood of future price spikes is low given the expected demand and supply conditions in the NEM over the next decade.[32]

Finally, the years since 2009/10 have not seen any retailer failures subsequent to Jackgreen in December 2009 (see Appendix A).

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31 AER, *State of the Energy Market 2012*, Figure 1.16, p.46.

32 The Australian Energy Market Operator believes that all NEM regions (except Queensland) have sufficient capacity to meet the NEM reliability standard until beyond 2022/23 under its medium demand scenario. Queensland has sufficient capacity to meet the reliability standard to 2019/20. See AEMO, *Electricity Statement of Opportunities for the National Electricity Market 2013*, Table E1, p.iii.

Market maturity and the promotion of competition

In our view, using the credit support arrangements to promote a more 'mature' market structure and increased retailer entry is inappropriate from a number of perspectives.

The level of credit support imposed on retailers should primarily reflect a judgement about how much risk customers are willing to bear from retailer financial failure. As noted above, the inability of customers to signal their willingness to take this risk (via DNSP pass-through charges) under the NEM regulatory arrangements is the fundamental basis for credit support in the NEM. Modifying credit support obligations in an effort to pursue other objectives simply creates distortions that detract from the central function of credit support.

Moreover, we consider that a mature market is one in which customers have a more rather than less measured attitude towards the very small risks and costs of retailer failure. A market in which only one retailer has failed (even with the GFC) in over a decade's experience of full retail competition[33] is one in which customers ought to be willing to trade-off a small risk of confronting unpaid DUoS pass-through costs in exchange for lower average retail tariffs. Furthermore, using credit support arrangements as a tool for promoting competition is precisely the type of intervention that one would expect to see in an immature market where policy-makers seek 'short cuts' rather than more direct, targeted measures to encourage competition.

A discriminatory credit support scheme could subsidise the entry of 'weak challengers' with high default probabilities and poor business models/ineffective credit management practices. Furthermore, a scheme that favours retailers with low credit ratings would weaken incentives for the businesses to improve their creditworthiness over time, and to avoid excessive risk-taking. Competition of this sort is unlikely to be sustainable and lead to an increased incidence of default within the sector. Such competition is unlikely to be of long-term benefits to consumers.

It should be noted that the AEMC has already found that three NEM jurisdictions – Victoria, NSW and South Australia – have sufficiently strong retail competition to justify the removal of all price regulation. Indeed, in its 2008 report reviewing the South Australian retail electricity market, the AEMC observed that competition could be hampered if price caps were set too low, preventing retailers from passing on input cost increases.[34] The Queensland Government has recently announced its intention to lift retail price regulation

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33 At least in NSW, Victoria and South Australia. Queensland introduced FRC in 2007.

34 AEMC, *Review of the Effectiveness of Competition in Electricity and Gas Retail Markets in South Australia, First Final Report*, 19 September 2008, pp. 33-34.

and move to a price monitoring framework by 1 July 2015.[35] If this occurs, it should improve the prospects for retail competition in that State.

However, if notwithstanding these findings and policy moves, the further promotion of competition was considered genuinely necessary, it would be more desirable to continue to pursue transparent measures towards this end. For example, measures that could be used and have been applied in the NEM and elsewhere include:

- Prescribing minimum retail contract standard terms and conditions (as in the National Energy Retail Rules (NERR))
- Improving information disclosure obligations on retailers (also through the NERR)
- Establishing comparison websites (such as *YourChoice* in Victoria)
- Implementing reforms to improve customers' awareness of options, such as by enhancing consumers' ability to access consumption information, enhancing the comparability between retailers' offers, and streamlining arrangements for retailer switching, as recommended by the AEMC.[36]

In this context, it is unclear why the credit support arrangements should discriminate in favour of small retailers. Retailers, small or large, should compete on their merits, and any credit support requirements should reflect closely the risk of default associated with the businesses.

Furthermore, at least in some states, it is not clear that there is even a case for intervention in order to promote additional competition. In this context, there appear to be very weak grounds for using credit support arrangements to further a competition objective.

Acceptable probabilities of retailer default

The selection of the level of retailer credit rating at which customers are assumed to be willing to be exposed to the maximum probability or value of loss is also something of an arbitrary choice. The Ofgem approach, as modelled by ACG in 2006, incorporated a risk of 0% (based on an S&P rating of AA) and the Modified Ofgem approach incorporated a risk of 0.12% (based on an S&P rating of A-). Under the no credit support approach, customers were assumed to be willing to bear any loss caused by the failure of a retailer with a bare investment-grade rating (S&P rated BBB- or above).

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35 Queensland Department of Energy and Water Supply, *The 30-year electricity strategy, Discussion Paper*, 2013, p.9.

36 See, for example, AEMC, *Power of Choice Review – giving consumers options in the way they use electricity, Final Report*, 30 November 2012, pp. iii-iv.

In our view, the choice of the acceptable probabilities of retailer default, while highly subjective, can be usefully informed by:

- The history of very few retailer failures in the NEM across a wide range of market demand-supply conditions – as noted above, only one retailer has failed in the NEM to date in over a decade of small customer retail competition in most jurisdictions.
- The revealed willingness of customers to continue contracting with small and new entrant retailers notwithstanding the somewhat higher probability of failure, which can lead to retailer of last resort upheavals and costs (as in the case of Jackgreen).
- As suggested in the ACG report,[37] the value of providing incentives for retailers to improve their risk profiles across *an achievable range* of credit scores.

37 ACG report, p.25.

3 Empirical assessment of changes to credit support scheme and retailer risk profiles

3.1 Implications of changes to credit support scheme

3.1.1 Key impacts

This section examines the implications of changes to the credit support scheme under:

- The Victorian scheme parameters computed by ACG (2006) – the maximum credit allowance is 33% of annual revenues and default probabilities and individual credit allowances are as set out in Columns 2 and 4 of Table 2 above; and
- The revised scheme parameters computed by PwC (2012) – the maximum credit allowance is 25% of annual revenues and default probabilities and individual credit allowances are as set out in Columns 3 and 6 of Table 2 above.

In particular, we consider a representative market where:

- The distributor has annual revenues of $400; and
- Retailers pay, on average, 90 days in arrears.

Consider a retailer with 24% market share and BBB- credit rating. Credit outstanding for that retailer is:

$$Credit\ outstanding = \frac{90}{365} \times 24\% \times 400 = 23.67.$$

Under the Victorian parameters:

- The maximum credit allowance is 33% of the $400 annual revenue, which is $132
- A BBB- retailer receives 48% of the maximum credit allowance, which amounts to $63.36
- Since the individual credit allowance exceeds the credit outstanding, no credit support is required.

Under the new parameters:

- The maximum credit allowance is 25% of the $400 annual revenue, which is $100
- A BBB- retailer receives 22% of the maximum credit allowance, which amounts to $22.00

- Since the credit outstanding exceeds the individual credit allowance by $1.67, that amount must be provided by way of credit support.

In the remainder of this sub-section, we consider a market made up of retailers with characteristics as set out in Table 6 below.

Table 6: Example market structure

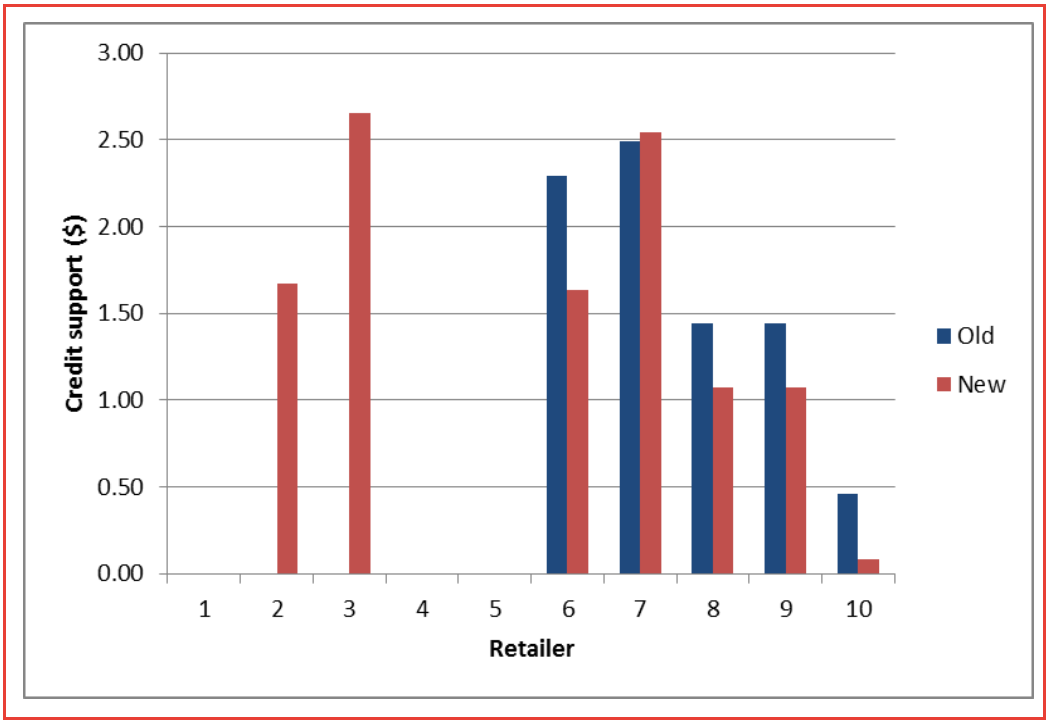
Retailer	Market share	Credit rating
R1	23%	BBB
R2	24%	BBB-
R3	25%	BBB-
R4	7%	BB+
R5	7%	BB
R6	5%	B+
R7	4%	B
R8	2%	B-
R9	2%	B-
R10	1%	B-

Source: SFG

Figure 1 below summarises the credit support required under the old (Victorian) scheme parameters and the new (PwC) parameters. The key features of that figure are:

- The credit support required by the B rated retailer (No. 7) is approximately equal under both schemes. This is because PwC selected the new maximum credit allowance percentage so that a B rated retailer had to provide approximately the same credit support as under the old Victorian scheme.
- The retailers with BBB- investment grade credit ratings (Nos. 2 and 3) previously had to provide no credit support and now have to provide material credit support.
- The other sub-investment grade retailers (Nos. 6 and 8-10) each provide materially less credit support under the new scheme parameters.

Figure 1: Credit support required in sample market – absolute



Source: SFG calculations

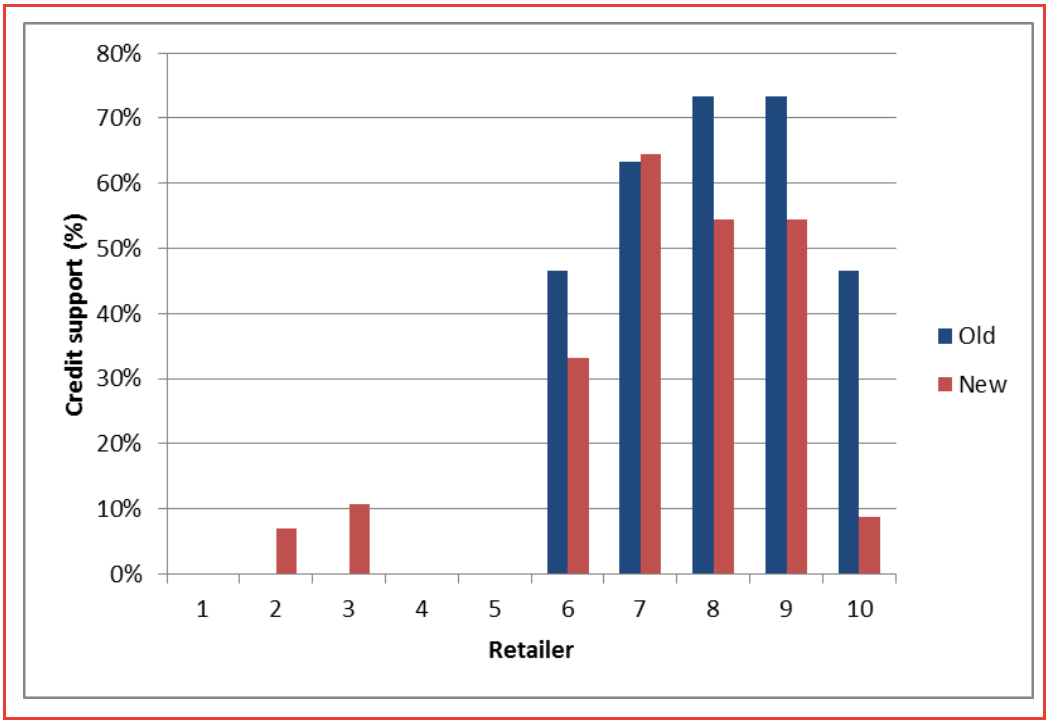
Figure 2 shows the credit support required under the old (Victorian) scheme parameters and the new (PwC) parameters, expressed as a percentage of the credit outstanding for each retailer. That figure also shows that:

- The credit support required by the B rated retailer (No. 7) is approximately equal under both schemes
- The retailers with BBB- investment grade credit ratings (Nos. 2 and 3) previously had to provide no credit support and now have to provide 7% and 11% credit support, respectively.
- The other sub-investment grade retailers (Nos. 6 and 8-10) each provide materially less credit support under the new scheme parameters (e.g. 46% down to 9% for Retailer 10).

Under the new scheme parameters, investment grade Retailer 3 is required to post credit support for 11% of its credit outstanding, whereas junk-rated Retailer 10 is required to post only 9%.

Empirical assessment of changes to credit support scheme and retailer risk profiles

Figure 2: Credit support required in sample market – proportion of credit outstanding



Source: SFG calculations

To demonstrate how the revised scheme exposes the distributor to *more* risk, we examine the proportion of sub-investment grade payments outstanding that are subject to credit support:

- Under the original scheme parameters, 30% of sub-investment grade payments were backed by credit support; and
- Under the revised scheme parameters, only 23% of sub-investment grade payments are backed by credit support.

Another way of considering how the revised scheme affects the risk borne by the distributor is to examine the expected loss after credit support. To perform this calculation, we assume that all payments that are backed by credit support have zero chance of loss to the distributor. The non-supported payments are then multiplied by a default probability consistent with their credit rating[38] to produce an expected amount of default. We find that:

- Under the original scheme parameters, the distributor is expected to suffer defaults of 1.8% of all sub-investment grade payments; and
- Under the revised scheme parameters, the distributor is expected to suffer defaults of 2.4% of sub-investment grade payments.

[38] We use the most recently available empirical default probabilities reported by Standard and Poor's throughout this analysis.

This example exposes a major weakness of the existing scheme. The MCE's discussion about default risk (see section 2) was based on the premise that the revised scheme parameters would have the overall effect of reducing the risk faced by distributors. However, as the example above shows, the reverse is true. In particular, the revision to scheme parameters acts to shift the burden of credit support from low-rated retailers (who are more likely to default) to investment grade retailers (who are very unlikely to default). The result is that distributors receive relatively more credit support where it is unlikely to be of any use and relatively less credit support where it is likely to be needed. From an economic perspective, this is an inefficient outcome.

The two different sets of scheme parameters also produce markedly different outcomes for different market structures. Consider two extreme cases:

- A market with two BBB- retailers, each with a 50% market share; and
- A market with 10 B- retailers, each with a 10% market share.

The total credit support required across all retailers – for these two market structures and under the old and new scheme parameters – is summarised in Table 7 below.

Table 7: Total credit support by scheme parameters and market structure

Scheme	x2 BBB- retailers	x10 B- retailers
Old	0	93.35
New	54.63	89.63

Source: SFG calculations

For a market dominated by two large investment grade retailers, the old system parameters would require that no credit support be provided, whereas the new parameters would require a total of $53.63 of support. For a market with 10 B-retailers, both sets of parameters would require material credit support, but the requirement would be lower under the new parameters. The expected default amounts (i.e. the product of the unsupported credit and the relevant default probability) are set out in Table 8 below.

Table 8: Expected default amount by scheme parameters and market structure

Scheme	x2 BBB- retailers	x10 B- retailers
Old	0.40	0.64
New	0.18	0.89

Source: SFG calculations

Empirical assessment of changes to credit support scheme and retailer risk profiles

Relative to the old scheme, the new scheme parameters produce lower expected default amounts when the market is dominated by investment grade retailers and much higher expected default amounts when the market is fragmented and populated by sub-investment grade retailers. That is, relative to the old scheme, the new scheme parameters require:

- More credit support where it is needed least (i.e. for investment grade retailers); and
- Less credit support where it is needed most (i.e. for retailers with junk ratings).

These are inefficient economic outcomes.

3.1.2 Further comparisons

Scenario 1

In this case we assume that the distributor has two connected retailers each contributing a 50% share of the distributor's revenue. For the sake of the illustration we assume the total credit outstanding is a quarterly billings amount of $100. This means that each retailer has approximately $50 credit outstanding. Based on the formula the maximum credit allowance for each retailer is $100 (25% of $400 annual revenue).

If we assume the first retailer has a credit rating of BBB and therefore receives a credit allowance of (37.5% of the maximum credit allowance) $37.50, then this retailer is required to post credit support of $12.50. If we assume that the second retailer has a BBB- credit rating and therefore receives a credit allowance of (22% of the maximum credit allowance) $22, then this retailer has to post credit support of $28. This means that the distributor receives total credit support of $40.50 from the retailers.

Scenario 2

In this case we assume that the distributor has ten connected retailers each contributing a 10% share of the distributor's revenue. Again we assume the total credit outstanding for the quarter is $100. This means that each retailer has $10 credit outstanding. Based on the formula the maximum credit allowance for each retailer is $100.

If we assume the first retailer has a credit rating of BBB and therefore receives a credit allowance of (37.5% of the maximum credit allowance) $37.50, then this retailer is not required to post any credit support. If we assume that the second retailer has a BBB- credit rating and therefore receives a credit allowance of (22% of the maximum credit allowance) $22, then this retailer is also not required to post any credit support. This means that the distributor receives zero credit support from the retailers with identical credit ratings (and therefore identical

likelihoods of default) as those in scenario 1. If we were to extend the analysis to the rest of the eight retailers in the market assuming that they were similarly rated (i.e. alternating between BBB and BBB- rated) then the same conclusion would hold: a market of five BBB rated and five BBB- rated retailers each representing a 10% share of the distributor's revenues would not be required to provide any credit support.

Scenario 3

Assume the same market as in scenario 2 above, with ten retailers each comprising a 10% share of the distributor's business. However assume that the retailers are all rated BB- and therefore have a credit allowance of (10% of the maximum credit allowance) $10. In this case the credit support each must pay is $3.30 ($10 credit outstanding minus $6.70 credit allowance). Consequently the distributor receives a total of $33 in credit support.

Comparing the scenarios: Large retailers required to provide more credit support

Scenario 1 illustrates well the onerous credit support required of large retailers. A large BBB retailer, with a very low probability of default has to provide credit support of 25% of credit outstanding. A large BBB– retailer with a low probability of default is required to provide credit support of 56% of credit outstanding.

Scenario 2 illustrates well the stark contrast for small retailers. No credit support at all is required of the retailers in Scenario 2, despite the fact that they have the same credit ratings as the retailers in Scenario 1.

Scenario 3 highlights the disadvantages of large retailers under the scheme further. The total amount of credit support received by the distributor in Scenario 1 is well in excess of that received in Scenario 3, despite the fact that all of the retailers in Scenario 3 have lower credit ratings (and a much higher risk of default) than those in Scenario 1.

3.2 Changes to credit rating default probabilities

The latest S&P default probabilities associated with different credit ratings are based on data collected up to and including 2012.

Table 9 shows how default probabilities have changed since the original ACG report.

Table 9: Revised S&P one year credit rating default probabilities

S&P rating	Default probability 2006 (%) (used in ACG report)	Default probability 2010 (%) (used in PwC report)	Default probability 2012 (%)
AA	0.00	0.02	0.02
A	0.04	0.09	0.07
A-	0.12	0.09	0.07
BBB+	0.20	0.17	0.14
BBB	0.30	0.24	0.20
BBB-	0.40	0.41	0.35
BB+	0.60	0.53	0.47
BB	1.00	0.82	0.71
BB-	1.80	1.34	1.21
B+	3.00	2.70	2.4
B	8.35	6.26	5.1
B-	12.20	9.86	8.17
CCC to CC	28.80	27.98	26.85

Source: S&P Annual Global Corporate Default Study and Ratings Transitions (various).

3.2.1 Diversification and correlation

One of the motivations for a policy framework that supports many small new entrant retailers is the effect that diversification has on the default risk faced by the distributor. As noted above, this quality is described in the ACG report as 'granularity'.[39]

For example, consider a distributor that has 32% of its outstanding payments owed by a single B rated retailer. Over the last 30 years, B rated entities have an average one-year default rate of approximately 7%.[40] Consequently, each year there is a 7% of a default relating to 32% of the outstanding payments and a 93% chance of no default.

[39] ACG report, p.25.

[40] See Table 9 of http://www.nact.org/resources/NACT_2012_Global_Corporate_Default.pdf.

Now suppose that the 32% of outstanding payments is split evenly between eight B rated retailers. First consider the case where the defaults are independent – every firm has a 7% chance of defaulting every year, independent of whether any other firms might have defaulted in that year. That is, conditional on knowing that the other 7 firms have defaulted in a particular year, the eighth firm still has a 7% chance of default that year. In this case, the distribution of defaults is such that:

- There is a 44% chance that at least one retailer will default;
- A 10% chance that two or more retailers will default; and
- Less than 1% chance that all eight retailers will default.[41]

That is, relative to the single B rated retailer, there is materially more chance of the distributor suffering at least some loss due to retailer default (44% chance vs. 7% chance), but less chance of all 32% of the outstanding payments being the subject of default. Whereas diversification reduces the likelihood of full default, it results in the distributor being affected, on average, by at least some level of default every second year.

Moreover, the benefits of diversification are overstated in the example above because in reality defaults are *not* independent. Data from Standard and Poor's shows that default rates among B rated entities are approximately zero in half of the years and approximately 14% in the other half of the years of their data set – averaging out to a 7% average default rate. In the years with a 14% default rate:

- There is a 70% chance that at least one retailer will default;
- A 31% chance that two or more retailers will default; and
- Less than 1% chance that all eight retailers will default.

Note that the assumption of independence implies a 10% chance of two or more defaults. However, the true figure is above 15% if Standard and Poor's observed correlation between defaults is accounted for.[42] In fact, the true figure in the context of NEM retailing may be higher still, because the correlation between the defaults of B rated electricity retailers is likely to be significantly higher than the observed default correlation between B rated entities generally. This is because electricity retailers in the NEM are likely to be stressed by the same events that stress other retailers – in particular, high wholesale spot prices – whereas other B rated entities will not be affected by such events.

Factoring in the Standard and Poor's correlation between defaults (i.e., making no allowance for potential greater correlation amongst NEM retailers),[43] and

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41 These figures are based on simple binomial probability calculations.

42 31% in "bad" years and 0% probability in "good" years, gives 0.5×31% + 0.5×0% = 15.5%.

43 Again, from the 2013 Standard and Poor's Global Default Summary.

Empirical assessment of changes to credit support scheme and retailer risk profiles

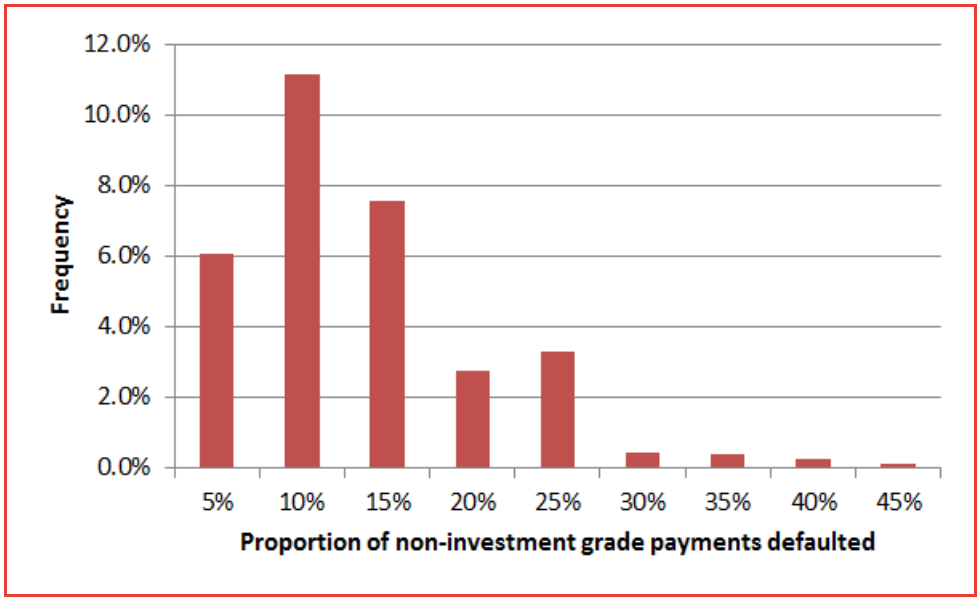
using the sample market structure from Table 6 above, produces the default rates in Figure 3 below. That is, given the sample market structure and the actual historical S&P experience in relation to defaults, we would expect that 5% of the non-investment grade payments would be the subject of a default in 6% of all years. We would expect that 10% of the non-investment grade payments would be the subject of a default in 11% of all years, that 15% of the non-investment grade payments would be the subject of a default in slightly less than 8% of all years, and so on.

That is, over a 20 year period, a DNSP could expect 1-2 years where 5% of non-investment grade payments were the subject of a default; 2-3 years with a default rate of 10%, 2 years with a default rate of 15% and 2 years with a default rate of 20% or more.

Moreover, higher default rates are likely if the correlation between the defaults of B-rated retailers serving the same market is likely to be higher than the correlation between B-rated entities world-wide.

From the perspective of a DNSP, the diversification benefits of serving a larger number of lowly-rated retailers are likely to be overstated.

Figure 3: Credit support required in sample market – proportion of credit outstanding



Source: SFG calculations

4 Options for improving the existing credit support arrangements

The previous section showed that the existing credit support arrangements have a number of shortcomings, which are likely to produce outcomes that are not consistent with economic efficiency. Therefore, there is a strong case for re-examining the design of the scheme to address these shortcomings. This section recommends a number of options for improving the current arrangements.

4.1 Recommended approach: Risk-based credit support

Section 2.4.2 reviewed three scheme design options considered in the 2006 ACG report. These were:

- Ofgem's credit support approach
- ACG's 'Modified Ofgem' approach
- No Credit Allowance approach.

In our view, the most robust approach to credit support arrangements in the NEM is the third approach examined in the ACG report – the 'No credit allowance approach'. To avoid creating the false impression that this third approach involves doing away with all credit support obligations, we describe it as the 'Risk-based credit support' option. Under such a scheme, only retailers with a credit rating below a specified level would be required to extend credit support, irrespective of their market share.

The Risk-based credit support approach is based on a view that:

- customers are generally risk-neutral and are willing to bear the risk of losses expected from a retailer with a bare investment-grade credit rating; and
- DNSPs can manage the liquidity risks arising from the delayed (pass-through) recovery of unpaid network charges accrued by failed retailers.

The rationale for adopting this approach is based on the:

- maturity of the NEM retail markets and the benign demand and supply conditions that have been experienced in recent years and are expected over the next decade;
- low historical incidence of retailer failure; and
- demonstrated willingness of customers to continue to contract with retailers of different risk profiles notwithstanding exposure to some residual risks in the case of retailer failure.

Under the Risk-based credit support approach, retailers would be required to provide credit support purely on the basis of their VaR[44] and risk of default, as indicated by their credit ratings. Such a scheme would ensure that credit support is provided where it is needed most (so would be efficient in an economic sense), and would provide appropriate signals for low-rated companies to improve their credit-worthiness over time and to avoid excessive risk-taking. There would be no inherent discrimination against larger retailers or retailers with a large market share in a particular DNSP's area.

Updating the credit support obligations under this approach using 2012 default probability data published by S&P generates the requirements set out in Table 10.

Table 10: Implications of Risk-based credit support approach (updated for 2012 default probability data)

S&P rating	Default probability (%)	Credit support as % VaR	Expected value (%)
BBB-	0.35	0	99.65
BB+	0.47	25.5	99.65
BB	0.71	50.7	99.65
BB-	1.21	71.1	99.65
B+	2.4	85.4	99.65
B	5.1	93.1	99.65
B-	8.17	95.7	99.65
CCC to CC	26.85	98.7	99.65

Source: ACG report, S&P and Frontier Economics.

Adoption of this option would require significant changes to Part B of chapter 6B of the NER.

If policymakers were to continue to view 'granularity' as an important objective for the credit support arrangements, we propose either or both of the following amendments to the existing Modified Ofgem-based scheme:

- Increase the maximum credit support allowance back to 33.33% of a DNSP's annual retailer network charges (as in the Second Exposure Draft); and/or
- Allocate a credit allowance of 100% to retailers rated BBB+ (by S&P).

These options are discussed below.

44 VaR is the "value at risk" – the term used in the Ofgem scheme. It simply refers to the amount owed by a particular retailer to the relevant DNSP.

4.2 Increasing the maximum credit allowance back to 33.33%

This option involves increasing the maximum credit support allowance from 25% back to the 33.33% it was under the original Victorian scheme and in the Second Exposure Draft.

A maximum credit allowance of 33.33% was considered appropriate and adopted by the Victorian government in its former credit support scheme on the advice of ACG. The only rationale for reducing it to 25% in the NECF Amendment Rule was to ensure that riskier retailers did not see a large reduction in their obligation to provide credit support pursuant to updated (2010) default probability data. Therefore, under the revised scheme, the policy variable appears to have been changed *from* the unsecured maximum credit amount *to* the amount of individual credit support for a small B rated retailer. In particular, the whole scheme is now based around preserving the amount of credit support that a B rated retailer would have had to provide under the outdated and erroneous calculations performed by ACG. PWC provided no indication of why the policy variable has changed or even acknowledged the change.

It is clear that the outdated and erroneous default probabilities in the ACG report must be updated. However, in our view, there are no sound economic reasons why the original policy variable should have been changed in such a way as to favour small, sub-investment grade retailers. If distributors and consumers were willing to bear A- risk in relation to 33% of annual distribution revenues in 2006, the default presumption is that they should still be willing to bear that same risk – at least in the absence of any evidence or even any statement to the contrary.

Accordingly, in our view, if retailers become less risky over time, the amount of credit support they should be required to provide should fall. The contrary argument made by the MCE in Bulletin 192 – that the GFC and increase in price spikes warranted a reduction in the maximum credit support allowance – do not appear robust in light of subsequent events and the market conditions outlook for the NEM.

An increase in the maximum credit allowance would increase significantly the unsecured credit allowance of retailers across the spectrum of credit ratings (using 2012 default probability data), as shown in Table 11.

Table 11: Implications of increasing the maximum credit allowance back to 33.33%

S&P rating	Current unsecured credit allowance (% DUoS charges)	Credit allowance percentage (based on 2012 default probability data)	Unsecured credit allowance based on 2012 default data and 25% MCA (% DUoS charges)	Unsecured credit allowance based on 2012 default data and 33.3% MCA (% DUoS charges)
AAA to A-	25	100	25	33.3
BBB+	13.2	50.0	12.5	16.7
BBB	9.4	35.0	8.8	11.7
BBB-	5.5	20.0	5.0	6.7
BB+	4.3	14.9	3.7	5.0
BB	2.8	9.9	2.5	3.3
BB-	1.7	5.8	1.4	1.9
B+	0.8	2.9	0.7	1.0
B	0.4	1.4	0.3	0.5
B-	0.2	0.9	0.2	0.3
CCC to CC	0.08	0.3	0.07	0.09

Source: ACG report, S&P and Frontier Economics.

4.3 Allocating the maximum credit allowance to BBB+ rated retailers

Another option for change to the current scheme that could be considered on a non-mutually exclusive basis is to provide the entire (100%) maximum credit allowance to retailers with S&P credit ratings of BBB+ rather than only to retailers with ratings at or above A-.

As noted above, ACG contended that a retailer rated A- by S&P, with a then-default probability of 0.12%, "deserve[d] a high unsecured credit allowance of one-third of a distributor's revenue."[45]

According to the PwC report, the 2010 probability of default of an A- rated retailer had fallen to 0.09% and the default probability of a BBB+ rated retailer had also fallen from 0.2% to 0.17%.

45 ACG report, p.23.

The most recent 2012 default probability data from S&P reveal that the probability of default of an A- rated retailer had fallen further to 0.07% and the default probability of a BBB+ rated retailer had also fallen further to 0.14%. That is, the original scheme parameters were based on DNSPs and customers being comfortable with a 0.12% chance of default. If they remain comfortable with that probability of default (and there is no evidence to the contrary), it is highly likely that they would be comfortable now in bearing the risk of a BBB+ entity.

Therefore, offering a BBB+ retailer that now has a 0.14% default probability only 52.9% of the credit allowance previously offered to an A- retailer with a default probability of 0.12% appears unreasonable.

Allowing retailers rated BBB+ to be entitled to the full maximum credit allowance would be justifiable on the basis that:

- A credit rating of BBB+ is comfortably investment-grade and hence maintains incentives for retailers with bare investment-grade ratings as well as those below to reduce their riskiness; and
- Such a retailer still has a very low risk of default (0.14% based on 2012 data)

This option would:

- Provide incentives for improving credit risk for those retailers with lower investment-grade credit ratings (eg BBB- and BBB); and
- Limit the expected losses of DNSPs' customers from retailer insolvency, by recognising that retailers with a BBB+ rating still have very low risks of default of retailers.

If this simple step were undertaken, the credit allowances would be increased substantially (assuming the 25% maximum credit allowance is retained) as set out in Table 12.

Table 12: Implications of providing BBB+ retailers the full maximum credit allowance

S&P rating	Current unsecured credit allowance (% DUoS charges)	Credit allowance percentage (based on 2012 default probability data)	Revised unsecured credit allowance based on 2012 default data (% DUoS charges)
AAA to A-	25	100	25
BBB+	13.2	100	25
BBB	9.4	70.0	17.5
BBB-	5.5	40.0	10.0
BB+	4.3	29.8	7.4
BB	2.8	19.7	4.9

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S&P rating	Current unsecured credit allowance (% DUoS charges)	Credit allowance percentage (based on 2012 default probability data)	Revised unsecured credit allowance based on 2012 default data (% DUoS charges)
BB-	1.7	11.6	2.9
B+	0.8	5.8	1.5
B	0.4	2.7	0.7
B-	0.2	1.7	0.4
CCC to CC	0.08	0.5	0.13

Source: ACG report, PwC report, S&P and Frontier Economics.

The unsecured credit allowances under this approach are approximately halfway between the current percentages and those under the original Victorian scheme.

4.4 Effect of both changes

If both changes were combined, which we consider to be the most appropriate and reasonable option in light of the reductions in default probabilities since 2006, the revised unsecured credit allowances would be as set out in Table 13.

Table 13: Implications of providing BBB+ retailers the full maximum credit allowance and increasing the maximum credit allowance back to 33.33%

S&P rating	Current unsecured credit allowance (% DUoS charges)	Credit allowance percentage (based on 2012 default probability data)	Revised unsecured credit allowance (% DUoS charges)
AAA to A-	25	100	33.3
BBB+	13.2	100	33.3
BBB	9.4	70.8	23.3
BBB-	5.5	41.5	13.3
BB+	4.3	32.1	9.9
BB	2.8	20.7	6.6
BB-	1.7	12.7	3.9
B+	0.8	6.3	1.9
B	0.4	2.7	0.9
B-	0.2	1.7	0.6

S&P rating	Current unsecured credit allowance (% DUoS charges)	Credit allowance percentage (based on 2012 default probability data)	Revised unsecured credit allowance (% DUoS charges)
CCC to CC	0.08	0.6	0.2

Source: ACG report, PwC report, S&P and Frontier Economics.

Appendices

Appendix A – Failures of small energy retailers

Jack Green Energy

Jack Green Energy operated as an energy retailer predominantly in NSW but also in Victoria and Queensland until it was suspended by the Australian Energy Market Operator in December 2009.

Jackgreen was granted a NSW retail licence in 2004. According to the NSW Energy Ombudsman, Jackgreen marketed "green energy," a product more suitable to higher income customers because of the additional cost whereas their marketers appeared to target customers of lower socioeconomic backgrounds.[46]

The National GreenPower Accreditation Program Annual Audit reported Jackgreen residential customers on GreenPower contracts as follows (NSW, Victoria, Qld, SA):[47]

- 2006 – 1,093
- 2007 – 47,742
- 2008 – 63,160 (of this total, 57,809 customers were on 10% GreenPower)

According to the prospectus for the attempted re-launch of Jackgreen (as Greenbox) in 2009 Jackgreen customer base reached approximately 75,000, however:

> During November 2009, a sharp increase in the demand for electricity resulted in significant increases in the price of electricity. Jackgreen International was not adequately hedged against the spike in electricity prices and was unable to meet the resulting liabilities. Consequently, Integral Energy issued several creditors' statutory demands on Jackgreen International.[48]

Media reports indicated that power generators were owed $5 million and were unlikely to redeem a cent from the collapsed group according to the company's administrators PKF.[49] According to these reports, apart from Integral, other power companies seeking payment of unpaid debts from Jackgreen were Origin Energy, AGL Energy, Country Energy and Energex.

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46 Energy & Water Ombudsman NSW, 2010, *Jackgreen – the failure of an energy retailer*, September, (EWON) p.4.

47 EWON, p.4.

48 Greenbox Ltd, 2010, *Prospectus*, December, p.34.

49 "Green collapse snares power suppliers", *Sydney Morning Herald*, January 4, 2010.

The NSW Energy Ombudsman attributes the failure of Jack Green Energy to:

- inappropriate marketing to low income and disadvantaged customers
- initial problems with their 'smooth pay' billing system
- ongoing billing issues resulting in significant billing delays for some customers
- an ineffective credit management policy which allowed high arrears to accumulate
- no viable customer hardship policy to identify and assist those customers in difficulty.[50]

The small scale of operations appears to be a driver of the failure. For example:

> In the early years of their operation, Jackgreen advised EWON that did not have the back office systems in place to deal with the significant increase in customers, particularly during 2006–2007. They did not have enough staff to deal with the volume of customer calls and other contacts. They also did not have a customer assistance/hardship program to assist customers in financial difficulty who were falling behind in payments.[51]

Energy One

Energy One Limited, established in 1996 and listed in January 2007, was an electricity retailer with customers in New South Wales, Queensland, Victoria and the Australian Capital Territory.

On 18 June 2007, Energy One announced that '[the] current volatility and repeated spiking of wholesale energy prices in conjunction with high sustained futures prices for the next three years has led [Energy One] to re-evaluate Energy One's business model'.[52]

On 22 June the company announced that it had advised NEMMCO and its customers 'that it would suspend the supply of electricity from midnight ... Friday 22 June 2007'. It again cited 'extremely high wholesale prices' and the belief that 'there may be further price events in coming weeks' as reasons for its actions.[53]

According to Allens Linklaters:

> Energy One cited quoted prices for hedges of nearly $102 for base load in Queensland and more than $150 for peak load in Queensland for the financial year

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50 EWON, p.1.

51 EWON, p.9.

52 Allens Linklaters, 2007, *Focus: Retailer of Last Resort – A First Under the National Electricity Market*, June, (Allens) p.2.

53 Allens, p.2.

ending 30 June 2008 (and only moderately lower quotes for NSW). This compared to prices of between $40 and $45 for base load earlier in 2007.[54]

Consequently, NEMMCO gave notice suspending Energy One with effect from midnight on 22 June, 2007.

54 Allens, p.2.

Appendix B – Risk profile of energy retailers

AGL

AGL is a very large national energy player with a history tracing back over 175 years. In October 2006 the Australian Gas Light Company (AGL) and Alinta Limited merged and in the process created AGL Energy, which began trading on the Australian Stock Exchange on 12 October 2006.

AGL serves over 3.5 million customers across Australia.

Standard & Poor's attributes AGL with a BBB investment grade credit rating.

Alinta

Alinta Energy supplies natural gas and electricity to 700,000 homes and businesses throughout Australia. They employ 780 people in 14 locations across Australia and New Zealand.

Alinta Energy began retailing gas as AlintaGas in Western Australia in 1995. AlintaGas became Alinta Energy in 2010. The company operates nine power stations with more than 2,500MW of installed capacity. The company is one of the main independent power generators in the Pilbara region.

Alinta Energy began retailing energy in Victoria and South Australia. Alinta Energy Retail Sales Pty Ltd (AERS) is a wholly owned subsidiary of Alinta Energy Finance Pty Ltd (Alinta Energy). AERS was established as the East Coast retail arm of Alinta Energy and was registered in Victoria in March 2011.

In July 2013, Moody's assigned a corporate family rating to Alinta for the first time. AEF Alinta's wholly owned financing vehicle, and the ultimate Australian holding company of the group was assigned a provisional (P) B1 corporate family rating. According to Moody's the ratings outlook is stable.

Moody's commented that:

> Alinta's provisional (P) B1 rating reflects the inherently risky nature of its East Coast vertically integrated energy business, the operating challenges experienced in recent years, as well as the company's high financial leverage and evolving capital management policy. At the same time, the rating considers Alinta's solid market position in the residential gas retail segment in Western Australia (WA), as well as improvements in its operating performance over the past year, and which support its rating at the mid-to-high single-B level.[55]

55 Moody's Investors Service, 2013, *Moody's assigns first-time corporate family rating to Alinta*, July.

Further, that:

> Alinta's East Coast merchant generation business is relatively small and its residential retail business is still in its development phase. Due to its modest operating scale, with only two key merchant generators on the East Coast, the company is more exposed to potential reliability issues at individual power stations and the changing competitive dynamics of the energy market.[56]

Alinta Energy is led by the global investment group TPG. Moody's reflected on the impact of its ownership in its credit rating decision:

> At present, around 80% of the company's equity interests are held by private equity and hedge fund investors, who are not expected to be natural long-term owners of Alinta. Additionally, we expect its financial strategy to likely favor shareholder-friendly initiatives within the confines of the loan documents. As such, the rating assumes that financial leverage will not decrease materially over time. Such an expectation of high financial leverage constrains Alinta's rating at the high single-B level.[57]

Alinta's corporate family rating could be upgraded if the company maintains the improved operating performance achieved in FY2013 and there is no major adverse impact from potential changes in Australia's carbon policy. Credit ratios justifying an upgrade would include Funds from Operation (FFO) to debt exceeding 12%, and FFO to interest expenses exceeding 2.5x, all on a sustained basis.

The rating could be downgraded if FFO to debt drops below 8%, and FFO to interest expenses falls below 2.0 times, all on a sustained basis.

Australian Power & Gas

Removed from the ASX in October 2013 following a successful takeover by AGL, Australian Power & Gas had operated since 2006. In 2013 Australian Power & Gas were reporting around 350,000 accounts. The company had operations in electricity and gas in Queensland, NSW and Victoria.

Blue NRG

Blue NRG has been operating in the Victorian marketplace since 2012. It was granted an electricity retail licence by the Essential Services Commission of Victoria in March 2012. On 29 June 2012, the Australian Energy Regulator (AER) approved an application from Blue NRG Pty Ltd (Blue NRG) for electricity retailer authorisation under the National Energy Retail Law.

Blue NRG is a wholly-owned subsidiary of Green Generation Pty Ltd.

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56 Moody's Investors Service, 2013, *Moody's assigns first-time corporate family rating to Alinta*, July.

57 Moody's Investors Service, 2013, *Moody's assigns first-time corporate family rating to Alinta*, July.

Click Energy

Click Energy is an online energy retailer with over 75,000 customers in Victoria, New South Wales and Victoria. It was granted an electricity retail licence by the Essential Services Commission of Victoria in April 2006.

Diamond Energy

Diamond Energy is a Victoria-based national electricity retailer focusing on serving customers who have solar panels. The company has been providing electricity from renewable sources to their customers since 2007, and had 3500 home solar PV systems in its portfolio in 2012.

Dodo Power & Gas

Dodo Power & Gas began retail operations in the Victorian electricity market in 2010 and in August 2011 launched into the New South Wales and Queensland electricity markets.

Dodo is marketing itself as a one-stop shop for home services by allowing consumers to bundle Home Phone, Internet, Gas and Electricity with a single company.

Dodo Power and Gas is owned by Dodo, an established internet service provider (ISP) and telecommunications (home phone, mobile phone) provider. Dodo is a privately owned Australian company with headquarters in Melbourne

Energy Australia

Energy Australia is a supplier of natural gas and electricity to over 1.25 million residential and business customers throughout Australia. Besides retail, EnergyAustralia also serves industrial and commercial customers, and holds a A$5 billion portfolio of energy assets.

Energy Australia is owned by the Hong Kong-listed Chinese group CLP.

Energy Australia had its genesis as TRUenergy, a company formed in 1995 from the combination of retail and generation assets purchased from Singapore Power, and CLP's own Yallourn Power Station, in Victoria's Latrobe Valley. In 2011, TRUenergy acquired from the NSW Government the retail business and trade name from the state–owned enterprise, Energy Australia.

In October 2013, Standard and Poor's lowered EnergyAustralia's credit rating to BBB- from BBB, and kept the outlook at negative, saying the group's risk profile has weakened due to adverse macro trends:.

> … including declining electricity demand, discounting of retail electricity and gas pricing, and soft wholesale electricity price trends. Concurrently, EA is experiencing continued delays in stabilizing its new retail billing platform.[58]

S&P comment that they:

> expect EA to earn lower earnings while incurring higher costs, which will likely constrain near-to-medium-term profitability.[59]

Lumo Energy

Lumo Energy is an Australian energy retailer wholly owned by Infratil and serving Victoria, New South Wales, South Australia and Queensland. Until July 2010 the company was previously known as Victoria Electricity, New South Wales Electricity, South Australia Electricity and Queensland Electricity. Lumo Energy currently provides energy to over 400,000 Australians.

Victoria Electricity has been retailing electricity in Victoria since February 2004. Victoria Electricity commenced retailing gas in early 2005.

According to Infratil, Lumo:

> has grown organically to almost 500,000 electricity and gas customers in Victoria, New South Wales, Queensland and South Australia. It is the largest second tier energy retailer in the eastern states of Australia.[60]

Infratil is an owner and operator of businesses in the energy (mainly renewable), airport and public transport sectors. Its energy operations are predominantly in New Zealand and Australia. The Company owns Wellington Airport in New Zealand and airports in Glasgow and Kent. Infratil's public transport services are in Auckland and Wellington, New Zealand.

Momentum Energy

In September 2009 Hydro Tasmania, Australia's largest generator of renewable energy, took full ownership of Momentum Energy. Momentum Energy is a second tier retailer with current retail electricity licenses in Victoria, New South Wales, South Australia and the Australian Capital Territory.

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58 Standard & Poor's, 2013, *Ratings On EnergyAustralia Holdings Ltd. Lowered To 'BBB-' On Weaker Business Performance; Outlook Remains Negative*, October.

59 Standard & Poor's, 2013, *Ratings On EnergyAustralia Holdings Ltd. Lowered To 'BBB-' On Weaker Business Performance; Outlook Remains Negative*, October.

60 http://www.infratil.com/our-businesses/energy/lumo-energy/profile/.

Neighbourhood Energy

Neighbourhood Energy is Victorian electricity retailer owned by Alinta Energy. Neighbourhood Energy was established by Alinta in 2006 and grew to around 65,000 customers in October 2011.[61]

Origin Energy

Origin Energy is a large Australian integrated energy company, focused on gas and oil exploration and production, power generation and energy retailing. Origin Energy was established in February 2000, following a demerger from Boral Limited.

Origin is the largest electricity retailer in Australia with dominant market share in many jurisdictions.

In February 2013, Moody's and Standard & Poor's lowered Origin Energy's credit rating to Baa2 and BBB respectively after the company reported weaker-than-expected first-half results last week. Fitch Ratings maintained its BBB+ rating at that time.

Moody's affirmed Origin's short-term P-2 rating and reported the outlook on the ratings as stable. However:

> The ratings downgrade follows Origin's weaker-than-expected performance outlined in its results announcement for the half year ending December 2012, and which will challenge Origin's capacity to preserve financial metrics appropriate for its Baa1 rating.[62]

Powerdirect

First established in 1997, Powerdirect was acquired by AGL Energy from the Queensland Government for $1.2 billion in February 2007. Powerdirect is a business electricity supplier in Queensland, NSW, Victoria and South Australia.

Powershop

Launched in Australia in 2012 after beginning in the New Zealand market in 2009, Powershop is a small online electricity retailer.

Powershop is wholly owned by Meridian Energy, a New Zealand (until recently) state-owned electricity generator and retailer. Meridian generates about 30% of

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61 CBD Energy Media Release (2011)

62 Moody's Investors Service, 2013, *Moody's lowers Origin's rating to Baa2 with stable outlook*, February.

New Zealand's Electricity from seven hydro and four wind facilities.[63] Meridian has over 270,000 customers across its two brands, Meridian and Powershop.[64]

The New Zealand government sold 49% of Meridian Energy in a public offering in 2013. The shares listed on the stock exchange in October 2013.

Meridian Energy has a Standard & Poor's credit rating of BBB+.

Red Energy

Red Energy began supplying electricity to Victorian households in 2004. Subsequently they have expanded into South Australia and New South Wales. Red Energy also supplies gas in Victoria.

Red Energy is wholly owned by Snowy Hydro, a joint venture of the NSW, Victorian and Commonwealth governments.

Simply Energy

Simply Energy provides electricity and gas to more than 300,000 accounts across Victoria, South Australia and Queensland, with sales totalling 12% of the Australian market. It is the retail business of GDF SUEZ Australian Energy.

According to the company website:

> The GDF SUEZ Australian Energy business is part of GDF SUEZ Energy International, a global company which operates in six core regions around the world. GDF SUEZ Energy International is responsible for GDF SUEZ's energy activities in 30 countries across six regions worldwide.
>
> Together with power generation, we are also active in closely linked businesses including downstream LNG, gas distribution, desalination and retail.[65]

Prior to becoming part of GDF Suez, Simply Energy was a retail brand of International Power which bought out Energy Australia interests in Victoria and South Australia in August 2007. GDF SUEZ acquired the U.K.-based International Power in 2011, and in doing so, became the world's largest energy player in terms of EBITDA, posting €17 billion in 2012.

Standard & Poors attributed GDF SUEZ with an A credit rating in May 2013, saying that:

> GDF SUEZ's major competitive advantage, resulting from its comprehensive scale, significant business and geographic diversity, and leading market positions, is the anchor of the group's business risk profile.

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63 Meridian Energy, 2013, *Meridian Share Offer Initial Public Offering of Ordinary Shares in Meridian Energy Limited: Investment Statement and Prospectus*, 20 September, p.51.

64 Meridian Energy, 2013, *Meridian Share Offer Initial Public Offering of Ordinary Shares in Meridian Energy Limited: Investment Statement and Prospectus*, 20 September, p.51.

65 http://www.gdfsuezau.com/the-company/about-us/.

The number of businesses GDF SUEZ operates is a distinctive feature of the group compared with other large integrated utilities. The group is in a position to capture value added wherever it exists in the chain, which depends at any time on cycles and market conditions. The group's breadth is further supported by its significant geographic diversification, which the IPR acquisition and the recent strategic changes have further accelerated. In 2012, 60% of the group's EBITDA was generated outside its two home countries.[66]

66 Standard & Poor's, 2013a, *Ratings Direct: GDF SUEZ S.A.*, May, p.5.

Appendices

SFG CONSULTING
Level 1, South Bank House
Cnr. Ernest and Little Stanley St
South Bank, QLD 4101

PO Box 29
South Bank, QLD 4101

Email: s.gray@sfgconsulting.com.au
Office: +61 7 3844 0684
Phone: +61 419 752 260