

APPENDIX 51

**Self-insurance report
Willis**

ENERGEX LIMITED SELF-INSURANCE ANALYSIS

SEPTEMBER 2014

Willis

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EXECUTIVE SUMMARY

We are pleased to provide our report detailing our findings of the study undertaken to determine a forecast self-insurance allowance for ENERGEX to cover below deductible claims associated with Public Liability insurance. This is for the five year period from 1 July 2015 to 30 June 2020 for below \$1.0m per event (\$2.0m bushfire) split between below \$100,000 and above \$100,000 claims.

KEY FINDINGS

A summary of our forecast premium equivalent is shown below with a more detailed outline of the work performed and the resultant outcomes shown thereafter.

The table below outlines the results:

Self-insurance costs (\$,000)			
Regulatory Period	Below \$100,000	Above \$100,000	Total
2015/16	1,385	1,384	2,769
2016/17	1,438	1,418	2,856
2017/18	1,493	1,454	2,946
2018/19	1,549	1,490	3,039
2019/20	1,608	1,527	3,135

Table 1 – Forecast self-insurance costs

The growth in self-insurance costs reflect CPI increases of 3% in 2015/16 and 2.5% per annum all other years, as forecast by the Reserve Bank of Australia.

These results are based on past actual costs and hence are a good indicator of the future.

METHODOLOGY

Following the provision by ENERGEX of claims and customer numbers shown in Table 3, we have revalued claims to 2013/14 and determined those claims below \$100,000 and above \$100,000 capped at \$1 million for all claims except bushfire which are capped at \$2 million.

Based on ENERGEX's triangulations, we have determined what further development is required to allow for the time lag between occurrence, reporting and settlement of claims. With so few claims above \$100,000 and no obvious trends in the claims we have taken a simple average of the developed revalued claims to produce a forecast as at 2013/14. For claims below \$100,000 we have taken a simple average claims cost per customer for the period 2008/09 to 2012/13.

Costs were increased by projected CPI to determine forecasts for 2015/16 to 2019/20.

Due to the potential variability in claims from year to year, we have also included an additional margin to reflect the variability in claims.

BACKGROUND

ENERGEX owns and operates an electricity distribution network that is regulated by the Australian Energy Regulator ("AER").

The current regulatory framework allows a Network Service Provider ("NSP") to include a self-insurance allowance in its forecast operating costs to address circumstances where it holds the risk of an event that is beyond its control because commercial insurance is either unavailable or priced inefficiently.

A self-insurance allowance allows a NSP to retain the risk on the basis that the funding to be included in its regulatory operating cost allowance will compensate it for the potential future loss.

To be eligible for a self-insurance allowance, a risk event must be predictable with losses measurable so that it is possible to estimate an amount (a premium) that needs to be allocated to pay for future uncertain losses.

For its next regulatory proposal covering the five year period from 1 July 2015 to 30 June 2020, ENERGEX intends to also include a proposal for a self-insurance allowance to cover its below deductible claims associated with Public Liability insurance.

OBJECTIVE

The purpose of this consultancy is to provide ENERGEX with advice that provides a calculation of projected future self-insured losses for Public Liability claims for the deductible values:

- below \$100,000 for all types of claims;
- between \$0.1m and \$1.0m excluding bushfires; and
- between \$0.1m and \$2.0m resulting from bushfires,

for the forthcoming regulatory period (1 July 2015 to 30 June 2020). This does not include Motor Third Party Property Damage risks.

Businesses must provide economic analysis to justify the efficiency and prudence of their expenditure proposals hence this report sets out the methodology and results to ensure that the self-insurance allowance is recognised under the operating expenditure objectives.

DATA RECEIVED

Information provided by ENERGEX is shown below:

- Individual claims were provided from 1 July 2001 to 30 June 2013 as at November 2013 including:
 - Amounts paid
 - Reserved amounts
 - Date of event
 - Reported date
 - Claim description
 - Claim status
- Claims triangulations, as shown in the appendices, detailing transactions based on accident year (2001 to 2013) and account year for:
 - Paid claims
 - Estimates/reserves for claims
 - Number of claims
- Insurance policy details for Public Liability for the period 30 November 2012 to 30 November 2015
- The previous AER submission – Revised regulatory proposal for the period July 2010 to June 2015
- Customer numbers for the regulatory periods 2001/02 to 2019/20.

Claims data has been summarised in financial years from 1st July to 30th June, as shown in Table 2 and Figure 1 below.

Policy Year	Paid (\$,000)	Outstanding (\$,000)	Incurred (\$,000)	No. of events (non zero)
2001/02	1,575	0	1,575	615
2002/03	1,453	0	1,453	591
2003/04	1,218	0	1,218	510
2004/05	3,780	0	3,780	604
2005/06	2,898	0	2,898	579
2006/07	1,431	0	1,431	472
2007/08	1,271	10	1,281	518
2008/09	1,697	0	1,697	564
2009/10	922	22	945	497
2010/11	1,593	0	1,593	455
2011/12	1,377	330	1,707	392
2012/13	1,573	810	2,382	385
Total	20,787	1,172	21,958	6,182

Table 2 – Public Liability claims

The number of non-zero events is the number of claims or series of claims arising out of one occurrence (event), as specified within the Public Liability insurance policy.

The average delay between occurrence date and reporting date is 44 days for paid or outstanding claims. However there is significant variability in the reporting of claims to ENERGEX which needs to be recognised when determining the potential cost of losses.

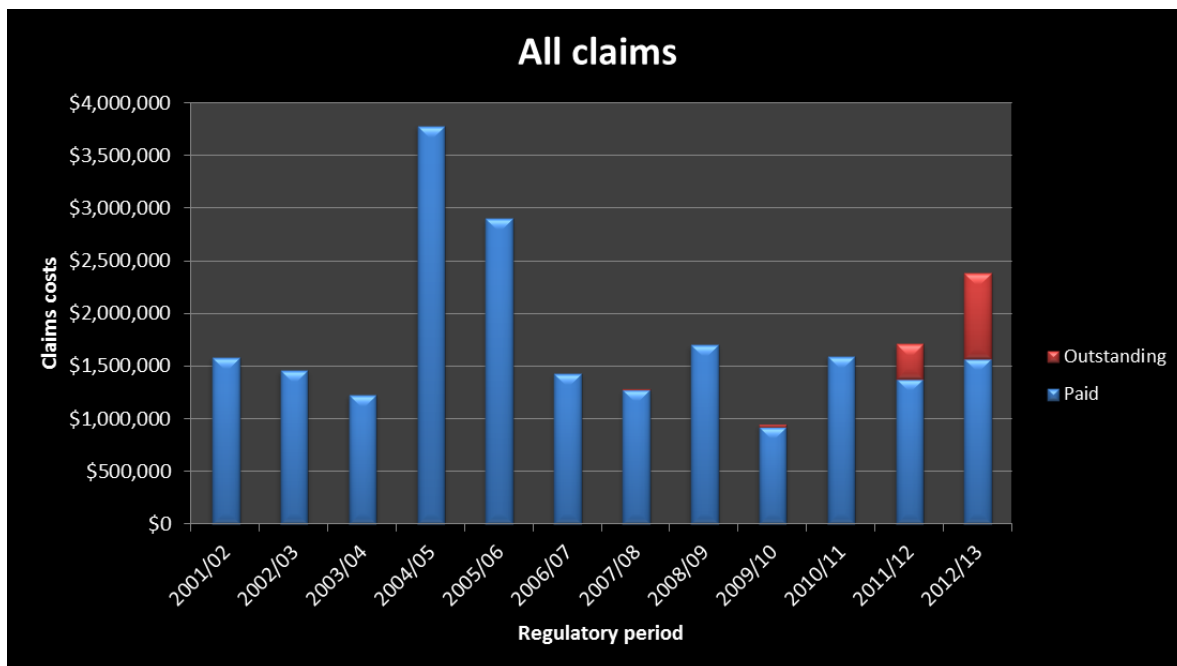


Figure 1– Summarised claims data

The number of customers is shown in the table below.

Regulatory period	No. of customers
2001/02	1,093,278
2002/03	1,120,459
2003/04	1,150,069
2004/05	1,178,051
2005/06	1,203,706
2006/07	1,230,949
2007/08	1,258,940
2008/09	1,278,200
2009/10	1,299,075
2010/11	1,316,185
2011/12	1,333,670
2012/13	1,347,195
2013/14	1,364,144
2014/15	1,381,478
2015/16	1,400,584
2016/17	1,418,622
2017/18	1,436,546
2018/19	1,454,484
2019/20	1,472,527

Table 3 – Number of customers

CLAIMS WITHIN SELF-INSURANCE LAYER

As stated previously, we are to consider only claims costs below deductible values, i.e. within \$1.0m (\$2.0m for bushfire claims) which would be covered under the Public Liability insurance policy. Uninsured losses are excluded from this analysis.

To ensure consistency in the historical claims we need to inflate to financial year 2013/14 in order to ensure a comparison on a like for like basis. We have reviewed claims and established that the main type of claim is property damage rather than bodily injury. Therefore we have used the Consumer Price Index (as available from the Australian Bureau of Statistics) to revalue claims. Without information regarding the date of individual payments, the paid figures have been revalued based on the relevant financial year. We have considered the time lag between occurrence and final settlement of claims from the paid triangulation. However most claims appear to be paid within three years of occurrence, hence this assumption is not unduly conservative.

Assuming the outstanding claims figures are accurate, that is they tend to be reviewed at least once a year, we have applied a 2% inflation rate to restate these to 2013/14.

Once these claims have been revalued we have determined the inflated historical claims that would be below and above \$100,000.

The table of losses below \$100,000, above the \$100,000 and also capped at \$1 million (\$2 million for bushfire claims) are shown in Table 4, Figure 2 and Figure 3 below.

Regulatory period	Revalued Incurred (\$,000)			No. of non-zero events	
	Below \$100,000	Above \$100,000	Capped at \$1m/\$2m	Below \$100,000	Above \$100k
2001/02	1,223	946	946	611	4
2002/03	1,300	645	645	587	4
2003/04	1,480	109	109	509	1
2004/05	1,616	3,193	3,193	597	7
2005/06	1,496	2,101	1,865	575	4
2006/07	1,062	647	647	468	4
2007/08	1,029	468	468	514	4
2008/09	1,330	569	569	561	3
2009/10	1,040	0	0	497	0
2010/11	996	709	709	452	3
2011/12	960	800	800	388	4
2012/13	1,044	1,389	1,389	382	3
Total	14,575	11,576	11,339	6,141	41

Table 4 – Capped claims

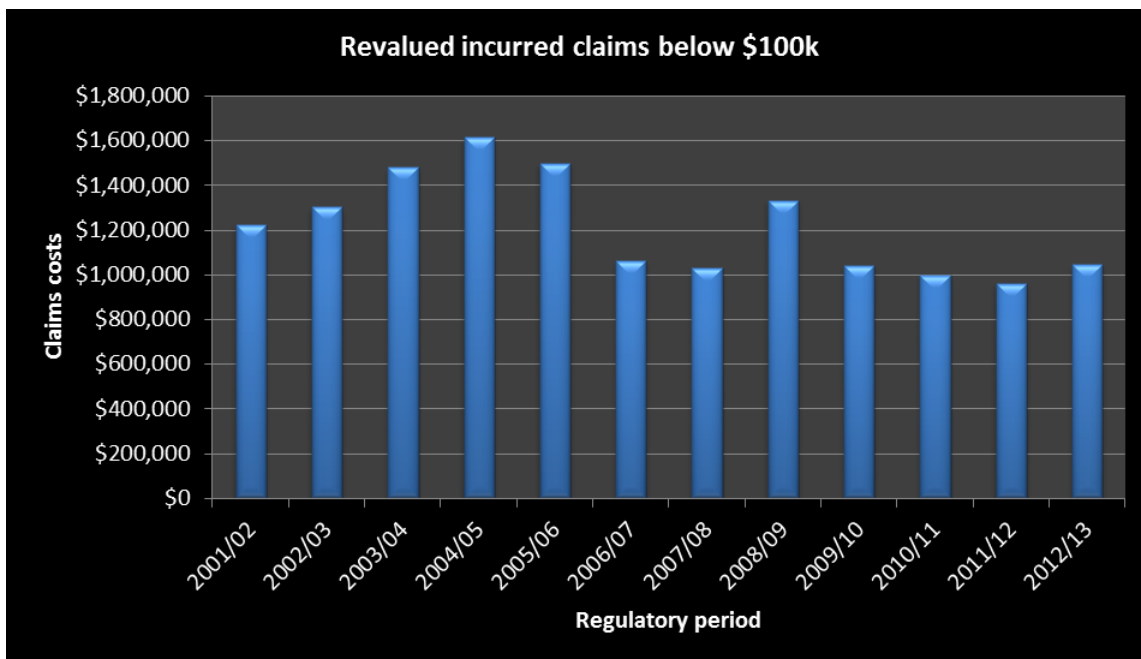


Figure 2 – Claims below \$100,000

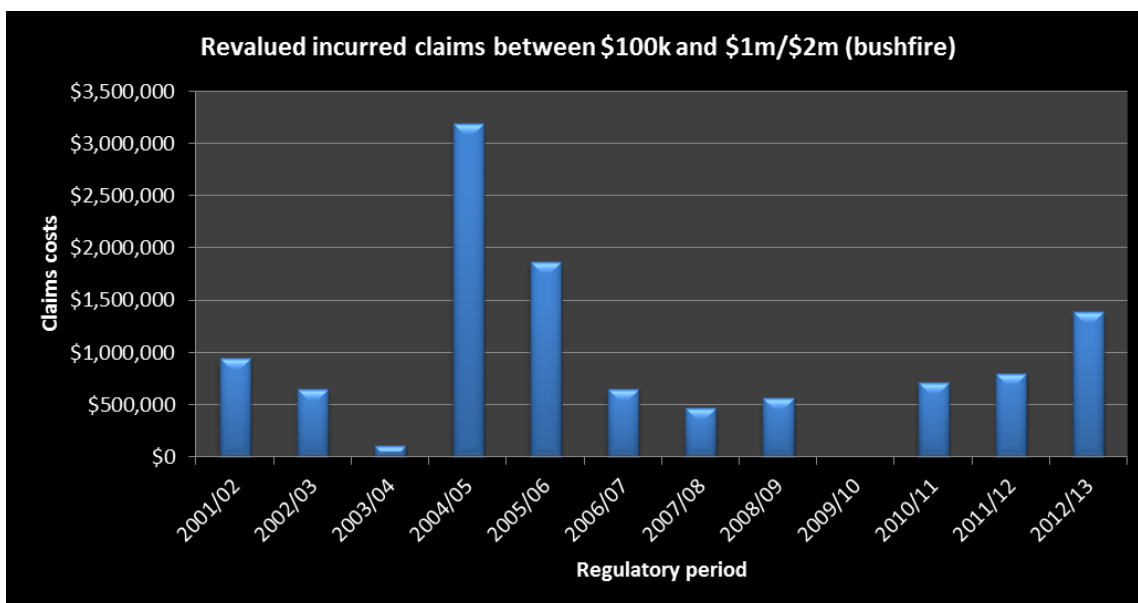


Figure 3 – Claims in the layer \$100k to \$1m/\$2m (bushfire)

We note the capping of \$1 million (\$2 million bushfire claims) only impacts the 2005/06 period keeping in mind that only 1% of all claims sit within the layer \$100k to \$1m/\$2m. However an average of 37% of the overall cost sits within the layer \$100k to \$1m/\$2m with some volatility evident.

Based on our calculations and sample size, there does not appear to be significant correlation between claims and exposure for losses over \$100,000. However for losses below \$100,000 there is a correlation between claims and customer numbers which we have considered in the forecast.

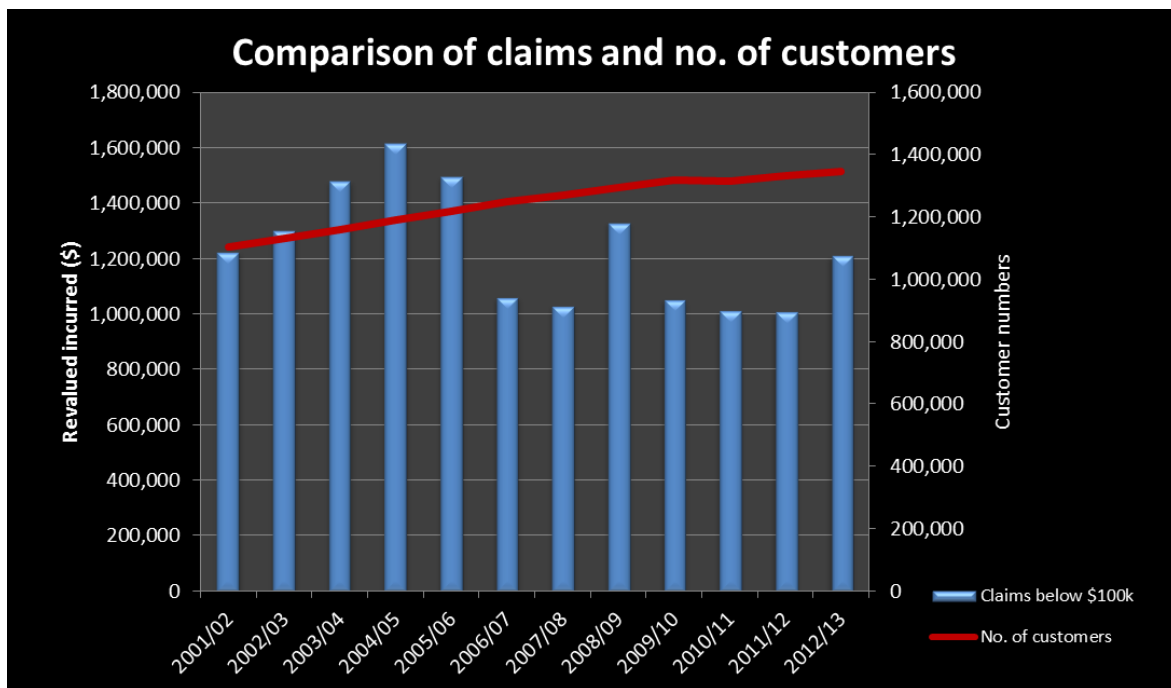


Figure 4 – Comparison of claims and customer numbers

In addition, we have considered the cause of claims over \$100,000 as identified in Figure 5 below.

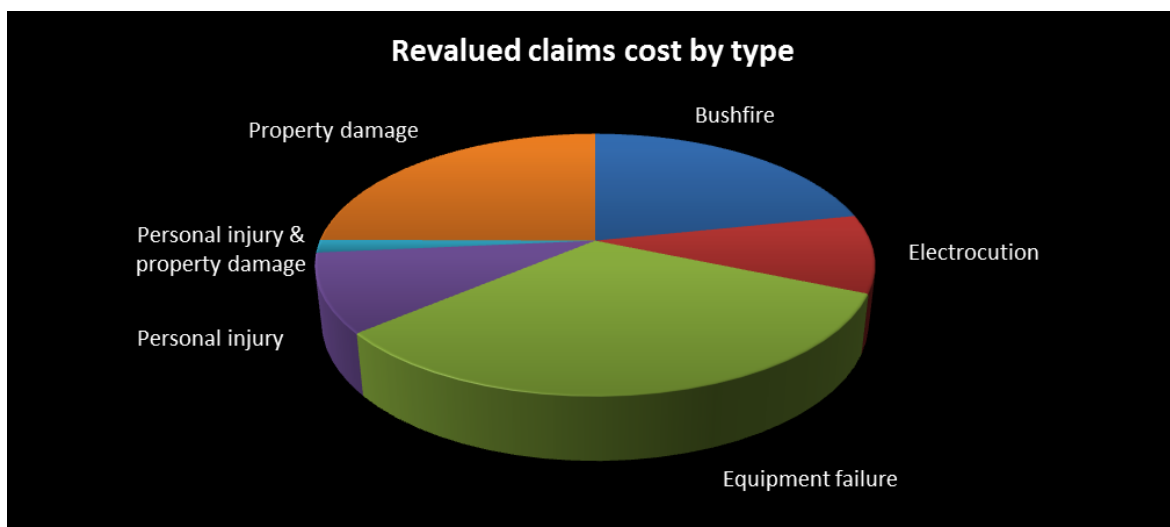


Figure 5 - Revalued claims over \$100,000 by type

We have assumed that the type of claims mix would not change across the years 2015 to 2020.

ASSUMPTIONS

To undertake this analysis a number of assumptions need to be made. These are defined below:

- Data provided by ENERGEX does not appear unreasonable.
- The breadth of the Public Liability insurance for 2015/16 to 2019/20 remains consistent with the current policy that is the cover does not expand nor contract from the current program.
- Although the Public Liability insurance covers a number of different risks, for the purpose of our analysis we have considered only claims seen to date. This ensures that our analysis is confined to predictable and measurable costs.
- The claims mix, that is the type of claim, will not change across the years 2015/16 to 2019/20.

ANALYSIS

As stated previously, we are to consider only below deductible values, \$1million for all claims except bushfire where there is a deductible of \$2million. Uninsured losses are excluded from this analysis.

Our analysis considers the losses in two components:

- Smaller or attritional losses below \$100,000
- Larger losses above \$100,000 limited to the current deductible.

Using the claims data, customer numbers and triangulations provided, we have undertaken the loss modelling. As stated previously, we have only forecast losses based on the claims seen to date. No consideration has been made for types of claims that have not occurred.

As stated previously, we have initially indexed claims to 2013/14 using CPI factors to ensure comparison on a like for like basis.

Public Liability claims tend to have a time lag between occurrence, reporting and settlement therefore we have considered further development of the claims. This will ensure that the developed claims reflect the final settlements i.e. the ultimate claims.

We have been provided with the claims triangulations for ENERGEX for all claims. These can be used to determine what further development is required, that is Incurred But Not Reported ("IBNR") and Incurred But Not Enough Reported ("IBNER") claims to calculate the ultimate costs for each financial year.

In addition we have access to triangulations from APRA which summarises all Public Liability claims seen by insurers in Australia. Due to the larger sample size of the APRA data, we would expect that this will include claims with longer reporting and settlement patterns than experienced by ENERGEX. However the development factors derived from the ENERGEX triangulations do not appear unreasonable and will provide a realistic assessment of IBNR and IBNER costs.

Regulatory period	Revalued Claims (\$,000)		Incurred development factors	Ultimate Costs (\$,000)	
	Below \$100k	Within layer		Below \$100k	Within layer
2001/02	1,223	946	1.000	1,223	946
2002/03	1,300	645	1.000	1,300	645
2003/04	1,480	109	1.000	1,480	109
2004/05	1,616	3,193	1.000	1,616	3,193
2005/06	1,496	1,865	1.000	1,496	1,865
2006/07	1,062	647	1.000	1,062	647
2007/08	1,029	468	1.000	1,029	468
2008/09	1,330	569	1.000	1,330	569
2009/10	1,040	0	1.013	1,053	0
2010/11	996	709	1.015	1,012	720
2011/12	960	800	1.050	1,008	840
2012/13	1,044	1,389	1.161	1,212	1,613
Average				1,235	968

Table 5 – Revalued developed claims

For the larger losses, with limited claims above \$100,000 subject to the deductible (“within layer”) and no obvious trends in the claims within the defined layer, we have taken a simple average of the developed revalued claims (ultimate costs) for policy years 2001/02 to 2012/13 to produce a forecast of \$968,000 as at 2013/14.

For the attritional losses where there is a correlation with exposure, we have considered on-levelling the claims to reflect the change in customer numbers.

Regulatory period	Ultimate costs below \$100k (\$,000)	Customer numbers	Ultimate costs per customer
2001/02	1,223	1,093,278	1.12
2002/03	1,300	1,120,459	1.16
2003/04	1,480	1,150,069	1.29
2004/05	1,616	1,178,051	1.37
2005/06	1,496	1,203,706	1.24
2006/07	1,062	1,230,949	0.86
2007/08	1,029	1,258,940	0.82
2008/09	1,330	1,278,200	1.04
2009/10	1,053	1,299,075	0.81
2010/11	1,012	1,316,185	0.77
2011/12	1,008	1,333,670	0.76
2012/13	1,212	1,347,195	0.90
Average			0.85
2013/14	1,166	1,364,144	0.85
2014/15	1,181	1,381,478	0.85
2015/16	1,197	1,400,584	0.85
2016/17	1,213	1,418,622	0.85
2017/18	1,228	1,436,546	0.85
2018/19	1,244	1,454,484	0.85
2019/20	1,259	1,472,527	0.85

Table 6 – Ultimate claims per customer

For losses below \$100,000 we have taken a simple average of the periods 2008/09 to 2012/13 to determine claims cost per customer. This reflects the step change from 2006/07 but recognises the potential for claims as high as 2008/09 figures.

This ratio of 0.85 has then been applied to the forecast customer numbers provided by ENERGEX.

In terms of our forecasts for 2015/16 to 2019/20 we felt the most appropriate way to inflate the costs was to use forecast CPI increases. The increase of 3% in 2015/16 and 2.5% per annum for regulatory periods 2016/17 to 2019/20 are forecast by the Reserve Bank of Australia.

Costs shown in the table below reflect the claims in the regulatory period in which they occur.

Regulatory period	Forecast losses (\$,000)	
	Below \$100,000	Within layer
2013/14	1,166	968
2014/15	1,208	990
2015/16	1,261	1,019
2016/17	1,309	1,045
2017/18	1,359	1,071
2018/19	1,410	1,098
2019/20	1,464	1,125

Table 7 – Forecast losses

The second stage of our analysis is to fit statistical distributions to model the expected losses and the variability of claims costs within the exposed layers. Of importance, based on the potential variability in the claims and the increased variability due to the small sample size, particularly for losses over \$100,000, is the standard deviation loading used to determine the self-insurance assessment/technical premium for each year. This recognises that although we have calculated the expected losses or more appropriately, the possible long-term average losses, the actual losses may vary significantly from this.

SELF-INSURANCE COSTS

In terms of insurance, technical premiums (or self-insurance costs) recognise the potential variability in claims from year to year but also overheads and profit margin that the insurer deems to be appropriate. For our analysis we have not included these other costs however we do need to recognise the potential volatility. The approach we have taken is to use the standard deviation results from the simulation modelling to include a margin in addition to the mean. We believe that a margin of 25% is appropriate based on market observation of insurance pricing. Therefore our forecasts will understate the price an insurer would charge if insurance was available for this layer.

RESULTS

Based on the methodology described above, we have calculated the self-insurance costs as follows:

Regulatory period	Below \$100,000 (\$,000)		Within layer (\$,000)	
	Forecast losses	Self-insurance costs	Forecast losses	Self-insurance costs
2015/16	1,261	1,385	1,019	1,384
2016/17	1,309	1,438	1,045	1,418
2017/18	1,359	1,493	1,071	1,454
2018/19	1,410	1,549	1,098	1,490
2019/20	1,464	1,608	1,125	1,527

Table 8 – Self-insurance costs

These results are based on past actual costs and hence are not an unreasonable indicator of the future.

APPENDICES

DATA

Individual claims above the \$100,000 threshold, when revalued are shown below.

Claim no.	Occurrence date	Paid	Outstanding	Cause
11795	17/10/01	95,449	0	incorrect equipment design
12318	21/11/01	109,638	0	TP fall in hole
12188	20/05/02	404,191	0	sagged power line (electrocution)
10824	21/06/02	77,438	0	equipment failure
11235	23/10/02	175,916	0	bushfire
11628	27/12/02	106,980	0	electrocution
11556	various	123,219	0	excavation/digging
12084	21/03/03	75,766	0	fallen power line (electrocution)
12911	13/08/03	83,482	0	service fault (electrocution)
13055	06/09/04	221,903	0	equipment failure
13157	27/09/04	249,572	0	bushfire
13153	08/10/04	1,346,753	0	bushfire
13207	19/10/04	152,936	0	equipment failure
13390	21/12/04	253,129	0	equipment failure
13617	01/02/05	102,654	0	TP fall on sand
13909	17/04/05	182,688	0	explosion
14247	14/10/05	996,184	0	equipment failure
14460	31/12/05	463,893	0	equipment failure
14406	various	102,810	0	excavation/digging
14876	31/05/06	129,819	0	equipment failure
18168	28/02/07	204,796	0	contractor injury
15510	05/03/07	91,324	0	equipment failure
16067	27/05/07	122,806	0	TP fall over pit
15737	25/06/07	122,785	0	sagging power line (electrocution)
15815	27/07/07	94,680	0	equipment failure
16086	22/11/07	92,506	0	equipment failure
16482	02/02/08	103,894	0	fault causing fire
16138	various	108,908	0	excavation/digging
16819	05/09/08	144,107	0	equipment failure
17369	06/04/09	222,195	0	equipment failure
18637	30/05/09	141,990	0	TP fall in hole
19045	25/12/10	379,873	0	equipment failure
19117	various	135,893	0	excavation/digging
19519	16/06/11	146,501	0	equipment failure
19573	06/07/11	196,851	0	equipment failure
19792	18/10/11	211,171	0	equipment failure
20203	22/03/12	133,871	35,219	snapped pole (vehicle damage)
20211	04/04/12	3,334	196,361	polarity testing (property damage)
20405	05/07/12	562,517	19,976	equipment failure
21022	28/02/13	192,938	0	flood
21309	09/05/13	0	585,000	n/a

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