



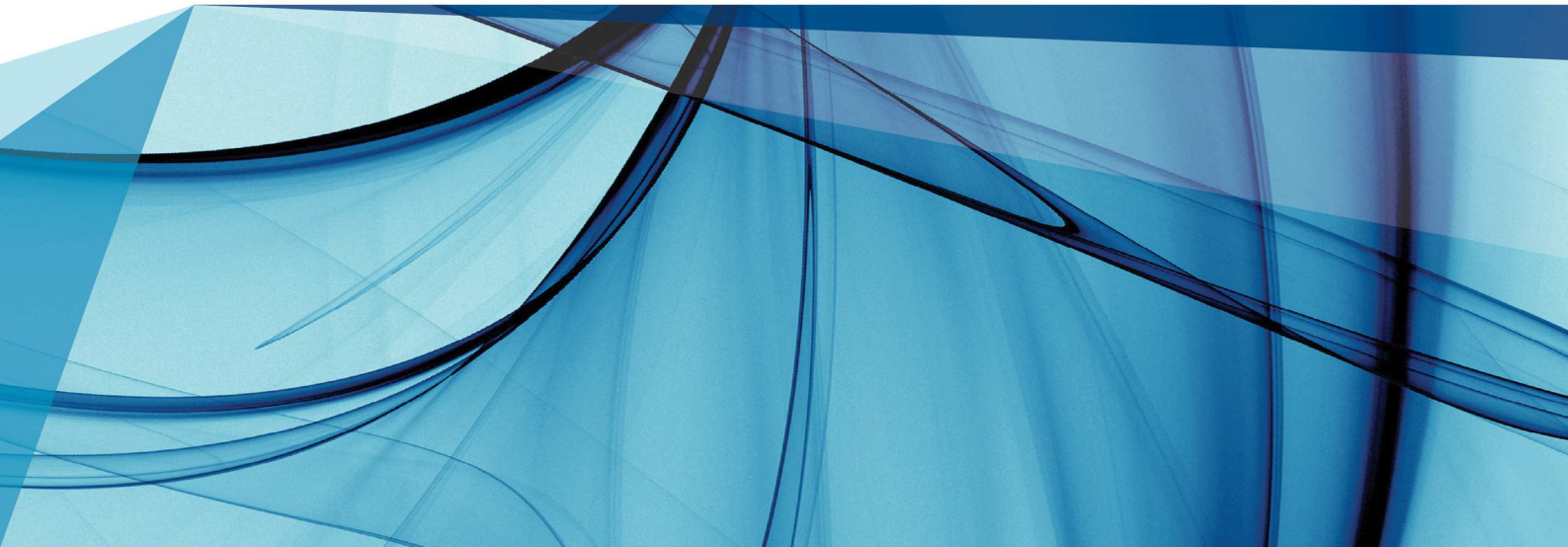
Insurance and Self Insurance Market Estimate

14 January 2014

TRANSGRID

QUANTIFICATION OF SELF-INSURANCE COSTS AND
ESTIMATION OF INSURANCE PREMIUMS 2014/2015 TO
2018/2019

FINAL





LARGE BROKER OF THE YEAR FOUR YEARS RUNNING

2008 | 2009 | 2010 | 2011

AUSTRALIA AND NEW ZEALAND INSTITUTE OF INSURANCE AND FINANCE

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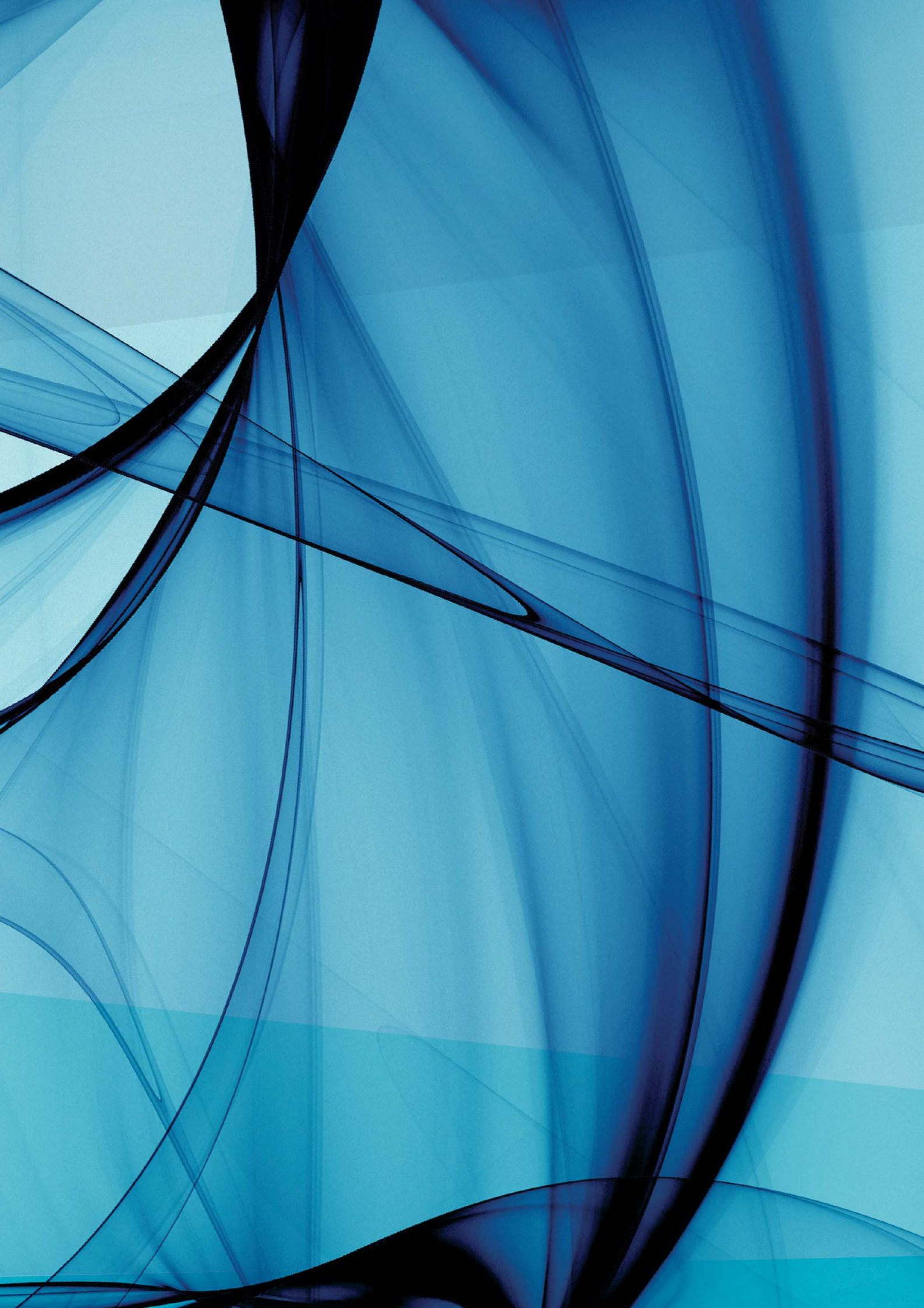
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INTRODUCTION

This report contains confidential and commercially sensitive information. Marsh agrees that this report may be disclosed to the Australian Energy Regulator (AER) on a confidential basis as part of TransGrid's regulatory submission.

Marsh understands that this report may be made publicly available, however, the report is prepared for use by TransGrid and the AER, and reliance on its contents should not be made by any other party.

Except insofar as liability under statute cannot be excluded, Marsh, its directors, employees and agents will not be held liable for any loss or damage of any kind arising as a consequence of any use of the Report or purported reliance on the Report including any errors in, or omissions from, the utilised models.

The Report must be read in its entirety. Individual sections of the Report, including the Executive Summary, could be misleading if considered in isolation from each other. In particular, the opinions expressed in the Report are based on a number of assumptions and qualifications which are set out in full in the Report.

SECTION ONE

EXECUTIVE SUMMARY

Marsh Australia (**Marsh**) has been engaged by TransGrid to provide a quantification of self-insurance costs in relation to its prescribed services in electricity transmission and estimate the insurance premiums payable. This is intended to form part of TransGrid's regulatory submission to the Australian Electricity Regulator (**AER**) for the regulatory reset period effective from 1 July 2014 to 30 June 2019.

PART A: SELF-INSURANCE QUANTIFICATION

The scope of this report is intended to provide estimates of the expected annual cost:

- Less than or equal to the insurance deductible, for losses relating to events covered by TransGrid's commercial insurance policies (**below-deductible losses**);
- Greater than the insurance limit, for losses relating to events covered by TransGrid's commercial insurance policies (**above-limit losses**); and
- Of losses relating to uninsured events (**uninsured losses**).

Costs relating to scheduled and unscheduled maintenance have been excluded from the analysis as they are not considered insurance related events.

Approach

We have focused on risks that are specific to TransGrid's prescribed services as a Transmission Networks Service Provider (**TNSP**) and established a ground-up frequency and severity profile for each. We have then also considered the insurance policy overlay for these risks. As a result, we were able to identify four groupings for the purpose of our analysis. These are as below:

- Liability
- Property Losses;
- Towers & Lines; and
- Other (Travel, Marine Cargo, etc).

With respect to each of the above, we have relied on a combination of TransGrid's incident history (**historical losses**) as well as potential losses that have not occurred for TransGrid but are deemed credible (**scenario losses**).

- For the historical losses, we were able to use TransGrid's historical experience, appropriately adjusted to be reflective of occurrence and cost of losses in the forecast period. These adjustments include steps to ensure the records are up-to-date and complete; the incidents are still relevant and current compared to the current risk profile.

Where incidents have not been finalised, we have applied an estimated cost provided by either TransGrid or the insurer.

- For the scenario losses, we have relied on an assessment of TransGrid's current risk profile, and deriving potential but credible scenarios resulting in losses that are not represented in TransGrid's loss history.

The approaches we have used in calculating self-insurance costs in this report are based on actuarial techniques and can be broadly considered as actuarial advice. However the scope and focus of the analysis in this report has been on the expected level of losses, no attempt has been made to investigate the potential volatility of these losses, which is usually another key component of actuarial advice.

We have also included in Appendix A of this report the CVs of the main personnel involved in this review.

Results

In total, we recommend TransGrid to adopt \$3.0M as an annual cost of self-insurance allowance for each of the forecast years in the upcoming regulatory reset period. Table 1.1 provides a breakdown by four risk groupings. We have selected these groupings with consideration of the types of TransGrid's assets, risk exposure and their insured status (as per commercial insurance policies).

Table 1.1 – Total self-insurance allowance \$

Year ending June	Liability	Property	Towers and Lines	Other	Total
2015	100,837	2,409,462	482,908	24,526	3,017,733
2016	100,837	2,409,462	482,908	24,526	3,017,733
2017	100,837	2,409,462	482,908	24,526	3,017,733
2018	100,837	2,409,462	482,908	24,526	3,017,733
2019	100,837	2,409,462	482,908	24,526	3,017,733
Total indexed to 30 June 2014 values					15,088,665

We must note our estimated self-insurance allowance is the expected annual cost of funding future losses, indexed to 30 June 2014 values (i.e. just prior to the commencement of the upcoming regulatory period) and is exclusive of any allowance for volatility, cost of capital or expenses relating to settlement of losses. For this reason, they are most likely lower than cost of any commercial insurances, as insurers would most likely be pricing for expected cost of losses, as well as expenses and profit margin.

Cost pass through

Additionally, we have recommended a number of events appropriate for the cost-pass through mechanism. These nominated events include:

- Insurance Cap Event;

- Natural Disaster Event;
- Terrorism Event;
- Insurer Default Event;
- Cyber Event; and
- Environmental Contamination Event.

We note total cost of the above events, net of external insurance proceeds must first exceed the materiality threshold, being 1% of TransGrid's maximum allowed revenue for the forecast year.

In relation to consideration of events to be nominated for the cost pass through mechanism, we have adopted a number of principles as follows:

- Quantification of such an event, by attaching frequency or severity, cannot be ascribed by reasonable means and is subject to significant uncertainty;
- There has been no past incidences of similar type of such event, or similar events of such magnitude for TransGrid, hence could regarded as an unforeseen event; and
- Such an event is beyond the control of TransGrid, or TransGrid has taken appropriate and reasonable means in order to prevent or reduce probability of its occurrence.

We thus believe under the circumstances given above, the adoption of the cost pass through mechanism will likely be the most effective approach in achieving on an ex-ante basis, an adequate balance between:

- Having the incentive mechanisms in place to ensure that prices for consumers are no more than necessary to provide an appropriate level of service;
- Whilst still providing TransGrid with a reasonable opportunity to recover efficient costs associated with events that are outside of their reasonable control.

It is our opinion that the above events are most appropriately treated and allowed for on an ex-post basis, i.e. using the cost pass through mechanism, ensuring that only TransGrid's efficient costs are passed onto the consumers. We have thus excluded these events from the estimated self-insurance allowance.

We also note the first three of the above events nominated for cost pass through are similar to those nominated in the AER's draft decision released on 30 August 2013 for SP AusNet's transmission determination 2014-15 to 2016-17. This is highlighted in the SP AusNet's draft decision document published on the AER public website. We have chosen this approach largely due to the parallels between TransGrid's operations, assets and risk profile and those of SP AusNet.

PART B: INSURANCE PREMIUM ESTIMATES

We have estimated the total base premium for the forthcoming five-year regulatory period to be \$44.9M representing an average annual spend of \$9.0m. Inclusive of charges and GST, the total premium amounts to \$64.5M, with an average annual spend of \$12.9M. The following table shows the breakdown of our estimate by year.

Table 1.2 – Total Premium Forecasts

Year ending June	Total Base Premium	Total including charges (excl. GST)	Total including charges (incl. GST)
2015	8,006,388	10,372,945	11,329,350
2016	8,453,424	11,031,968	12,048,588
2017	8,983,255	11,819,823	12,908,386
2018	9,529,248	12,613,993	13,775,072
2019	9,960,477	13,235,994	14,453,937
Total indexed to 30 June 2014 values	44,932,792	59,074,723	64,515,333

A breakdown of the individual forecasts for each insurance class is provided in Sections Thirteen to Eighteen.

Our estimated premium forecasts have been indexed to 30 June 2014 values and consider economic inflationary pressures as well as changes in TransGrid's risk profile and the broader insurance market as well as factoring in planned asset growth for the period.

The following sections of this report highlight details on approach, reliances and limitations, premium projections by each insurance class.

Section Nineteen shows insurances that were investigated by TransGrid and Marsh but not recommended due to the cost benefit analysis.

SECTION THREE

RELIANCES AND LIMITATIONS

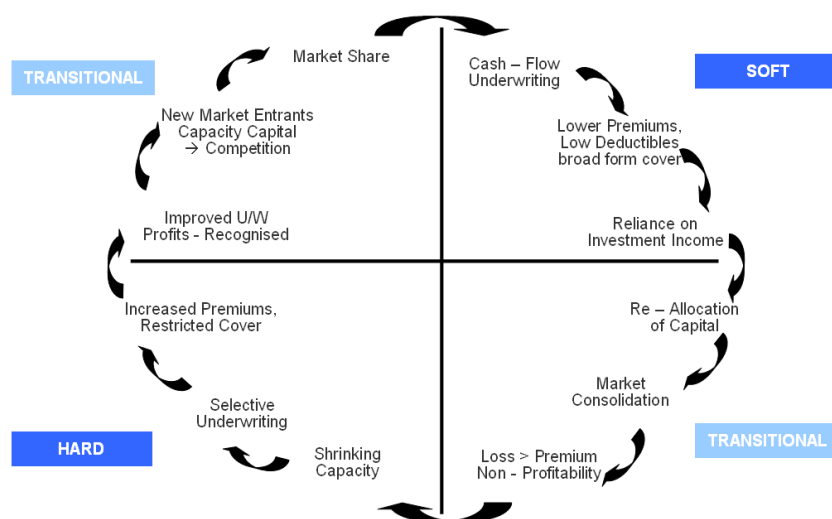
Reliances and Limitations

We have assumed that the information provided to us is accurate and complete in all material aspects. We have considered the reasonableness of the data but have not undertaken a complete review to verify the accuracy. We note that our estimates assume insurance coverage for each line of business as per the 2011/12 commercial insurance structure in place – e.g. deductible, limits of liability, sub-limits etc.

The opinions and estimates contained in this report constitute our best judgement as of the date of this report and are subject to change without notice. In our judgement, we have employed techniques and assumptions that are appropriate and the conclusions presented herein are reasonable, given the information currently available

We have projected premiums for the insurance classes as outlined in Section Eleven – Purpose and Scope. We are not aware of any other insurance that TransGrid will be, or is considering, purchasing throughout the reset period. However, we note that it is possible that TransGrid will obtain other insurances that may become necessary throughout the regulatory period. To the extent that additional insurance is required, our total forecast will be underestimated

Broadly speaking, global property and casualty insurance markets oscillate between hard and soft periods demonstrating the various characteristics illustrated below. Soft markets are generally beneficial to the insured offering lower premiums, favourable policy conditions and ample capacity. Conversely, hard markets dictate selective underwriting, shrinking capacity and higher premium levels. In between these two market extremes are transitional phases. Importantly, it is rare for the insurance market to follow the cycle full-circle as events like natural catastrophes and economic influences distort the natural order.



In contemplating TransGrid's insurance premiums for the reset period, Marsh have considered property and casualty markets from a global perspective, as capacity has been historically sought from Australia, the United Kingdom and Europe. In view of this, we have adopted the four-stage market model as a basis to arrive at premium estimates from 2014 to 2018. Of note, we do not consider the possibility of one-off market shocks like catastrophe events and financial crises in our projections.

Currently the market for both property and liability is competitive and sitting in the soft market phase, although Energy property business could still be classed as transitioning to soft market. Whilst there have been some recent natural catastrophe events, for example the New South Wales Bushfires, given the abundance of capacity in the market a single event of \$300 billion would be required to transition back to a hard market. On this basis we don't envisage major changes in premium fluctuations over the coming reset period.

When reviewing these premium estimates, we draw your attention to the following subjectivities:

- Premiums are estimates only and subject to change
- Premiums are based on the current conditions, rates and parameters of TransGrid's 2011 policies
- Estimates assume there is no significant change to TransGrid's risk profile or claims experience over the projection period
- With the exception of the capital expenditure figures provided to Marsh, Total Insured Values remain constant across the six year period
- All statutory charges, including GST, Stamp Duty and the Terrorism Levy are based on rates as at 1 September 2013, and are subject to change based on the final placement structure of the programme

The projections relate to base premiums and do not include charges and levies such as GST, stamp duty and terrorism levies which will increase the total premium spend – see Appendix D for estimated details of these charges and levies.

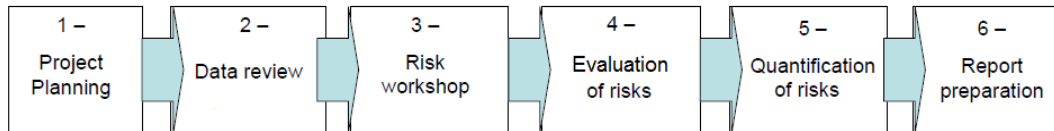
The opinions and estimates contained in the Report constitute our best judgement as of the date of the Report and are subject to change without notice. In our judgement, we have employed techniques and assumptions that are appropriate, and the conclusions presented herein are reasonable, given the information currently available.

PART A: SELF INSURANCE QUANTIFICATION

SECTION FOUR

SCOPE & APPROACH

The scope of the project involved the following steps:



TransGrid provided Marsh with data, including:

- Claims and incidents registers (1995 – 2013);
- Corporate Plan 2013-2018;
- An analysis of risk for revenue reset (reflective of the 2008 self-insurance analysis and the AER response);
- Self-insured workers Compensation Scheme report (2009-2013);
- TransGrid Declared Property 2013;
- TransGrid Asset base forecast to 2019;
- Dec-12 Quarterly Insurance Report;
- 2012-2013 invoices;
- Substation values;
- Towers and lines values; and
- Operational and strategic risk profiles.

Marsh created an indicative list of possible sources of risk that were reviewed in consultation with TransGrid on 16 September 2013. The consultative process enabled the identification of risks appropriate for self-insurance or cost pass through mechanisms (Appendix C).

The scope of this report is intended to provide estimates of the expected annual cost:

- Less than or equal to the insurance deductible, for losses relating to events covered by TransGrid's commercial insurance policies, (**below-deductible losses**);
- Greater than the insurance limit, for losses relating to events covered by TransGrid's commercial insurance policies, (**above-limit losses**); and
- Of losses relating to uninsured events (**uninsured losses**).

Costs relating to scheduled and unscheduled maintenance have been excluded from the analysis as they are not considered insurance related events. We are aware that the data provided by TransGrid has either explicitly excluded or noted/described any maintenance related costs within the incident registers provided; presumably these costs have been

included in another part of Operational Expenditure (**OPEX**) allowance within TransGrid's regulatory submission.

We have focused on risks that are specific to TransGrid's prescribed services as a Transmission Networks Service Provider (**TNSP**) and established a ground-up frequency and severity profile for each. We have then also considered the insurance policy overlay for these risks. As a result, we were able to identify four groupings for the purpose of our analysis. These are as below:

- Liability
- Property Losses
- Towers & Lines; and
- Other (Travel, Marine Cargo, etc).

With respect to each of the above, we have relied on a combination of TransGrid's incident history (**historical losses**) as well as potential losses that have not occurred for TransGrid but are deemed credible (**scenario losses**).

- For the historical losses, we were able to use TransGrid's historical experience, appropriately adjusted to be reflective of occurrence and cost of losses in the forecast period. These adjustments include steps to ensure the records are up-to-date and complete; the incidents are still relevant and current compared to the current risk profile. Where incidents have not been finalised, we have applied an estimated cost provided by either TransGrid or the insurer.
- For the scenario losses, we have relied on an assessment of TransGrid's current risk profile, and deriving potential but credible scenarios resulting in losses that are not represented in TransGrid's loss history.

The approaches we have used in calculating self-insurance costs in this report are based on actuarial techniques and can be broadly considered as actuarial advice. However the scope and focus of the analysis in this report has been on the expected level of losses, no attempt has been made to investigate the potential volatility of these losses, which is usually another key component of actuarial advice.

The following four sections describe our detailed findings on each of the groupings above; whilst Section Nine discusses and defines the events under the cost pass through mechanism. The diagram below summarises how each risk grouping has been incorporated and treated within our approach.

Table 4.1 – Summary of approach

	Self-insurance - historical losses	Self-insurance - scenario losses	External Insurance	Cost pass through
Liability - below deductible	✓	✗	✗	✗
Liability - insured losses, within Limit of Liability	✓	✓	✓	✗
Liability - above Limit of Liability	✗	✗	✗	✓
Property total - below deductible	✓	✗	✗	✗
Property total - insured losses, within Limit of Liability	✓	✗	✓	✗
Property total - above Limit of Liability	✗	✗	✗	✓
Towers & Lines - below \$9m	✓	✓	✗	✗
Towers & Lines - above \$9m	✗	✗	✗	✓
Others - below deductible	✓	✗	✗	✗
Others - insured losses, within Limit of Liability	✓	✓	✓	✗
Others - above Limit of Liability	✗	✗	✗	✓

SECTION FIVE

LIABILITY

Available data

Marsh has been provided with a claims and incident register containing claims against TransGrid from financial years 1996 – 2013. Records have been used from the period between 1/07/1995 to the 30/06/2013.

Insurance arrangements

Commercial Insurance arrangements are based on information contained in the insurance manual for the period 30 June 2011 to 30 June 2012. We have been advised by TransGrid to provide estimates on the basis that these commercial insurance policies are in place, effective from June 2014 to the end of the five year projection period.

TransGrid's commercial insurance program provides cover for liability losses relating to:

- Public & Products / Bushfire liability
- Failure to Supply
- Electric and Magnetic Fields (EMF)
- Completed Operations
- Professional Indemnity
- Automobile Liability

In addition Directors' & Officers' (**D&O**) policy covering:

- D&O Liability,
- Company Reimbursement

The liability cover contains an umbrella layer and 6 additional excess layers providing cover up to \$600m any one occurrence. The D&O cover contains 3 excess layers providing cover up to \$100m any one claim in the aggregate.

The liability policy operates with a deductible typically of \$0.25m any one occurrence, with notable exceptions including bushfire liability with a \$1m deductible any one occurrence.

Self-Insurance Allowance

The claims register has been used to derive estimates of annual losses as at June 2014 for each of the future five years during the next regulatory reset period. The following approach has been used:

1. Index historical losses to June 2014 values

2. Overlay ground-up loss with TransGrid's liability insurance program
3. Derive a normalised level of forecast frequency based on historical occurrences
4. Derive a normalised level of forecast severity based on indexed below-deductible losses
5. Multiply the forecast severity and frequency to derive the expected annual retained losses attributable to historical losses.
6. We have also considered events that may not be reflected in loss history (scenario losses).
7. Total self-Insurance allowance for liability is the summation of steps 5 and 6.

Historical losses

Based on below-deductible historical losses relating to liability, we have derived an annual retained loss estimate of \$81k as a component of TransGrid's self insurance allowance attributable to historical liability losses.

Table 5.1 – Liability losses from claims and incident register

Year ending June	Number of incidents	Number of losses	Total cost of losses (indexed to June 2014) (\$)
1996	0	0	0
1997	1	1	32,157
1998	3	2	14,506
1999	0	0	0
2000	0	0	0
2001	1	1	250,000
2002	0	0	0
2003	2	2	31,994
2004	3	3	125,929
2005	0	0	0
2006	1	1	250,000
2007	0	0	0
2008	0	0	0
2009	1	1	250,000
2010	0	0	0
2011	4	4	157,253
2012	3	1	10,623
2013	3	1	1,910
Totals	22	17	1,124,372
Average number of incidents (Forecast frequency)			1.22
Average cost per loss (Forecast severity)			66,140
Self-insurance allowance (frequency x severity)			80,837

Scenario losses

In accordance with the claims register and other information sources provided, TransGrid have been responsible for 6 fires since 1995, none of which have resulted in significant third party damage. Nonetheless it is considered reasonable that an event with sufficient severity, exceeding the current bushfire liability insurance deductible but not above the insurance Limit of Liability could occur once every 50 years. This is based on the following considerations:

- Only a relatively small amount of damage is required to exceed the Bushfire liability deductible of \$1m (e.g. a few houses, crop damage, etc)
- Based on a statistical evaluation we consider it reasonable that such an event could be attributed a 0.02 annual probability or one-in-50 year return period. This evaluation accounts for the balance of probabilities given no such events occur within the period of the available loss history when also accounting for the existence of other independent risks, also not observed in the loss history, and quantified as part of the self-insurance allowance.

Accordingly we have included within the self-insurance allowance, a likely event such as a bushfire resulting in third party liability costs up to or exceeding the current insurance deductible, but not exceeding insurance Limit of Liability. Based on an annual probability of 0.02 we recommend an amount of \$0.02m to be included as a component of TransGrid’s self-insurance allowance for scenario losses.

Liability total

In total we estimate an annual allowance of \$0.1m in self-insurance costs relating to liability losses, as shown in the table below.

Table 5.2 – Liability self-insurance allowance \$

Year Ending June	Historical losses	Scenario losses	Total
2015	80,837	20,000	100,837
2016	80,837	20,000	100,837
2017	80,837	20,000	100,837
2018	80,837	20,000	100,837
2019	80,837	20,000	100,837

Cost Pass Through Mechanism

We consider it credible that highly infrequent events have the potential to result in liability claims that exceed limits of liability for the relevant insurance policy. Through consultation with TransGrid the following have been highlighted as potential high severity / low probability risks faced by the company:

- A bushfire event originating from a TransGrid asset resulting in significant third party damage
- Liability resulting from interaction with third party infrastructure
- Failure to supply
- Terrorism

- Long tailed liability, for example third party or employee exposure to asbestos or Electric and Magnetic Fields (**EMF**)

Due to the lack of available data and the very low probability of extreme liability scenarios, reliable quantification is difficult. A cost pass through mechanism is likely to be the most effective approach for managing high severity and low probability risks.

The potential severity of extreme liability events are likely to be beyond the control of the prudent operator as they are contingent upon factors associated with remote probabilities, such as extreme weather events, that are difficult to monitor and control. In consideration of the above, we consider it appropriate for these events to be covered under the cost pass through mechanism, discussed and defined in Section Nine.

SECTION SIX

PROPERTY

Available data

Marsh has been provided with a claims and incident register containing losses from financial years 1996 – 2013. Records have been used from the period between 1/07/1995 to the 30/06/2013.

The most significant incidents contained with the loss history include, all with CPI indexed values of greater than \$2.5m:

- 2004 – Static Var Compensator Transformer failure
- 2005 - Cable 41 undermined by unknown parties
- 2009 - Explosive Failure of transformer

Insurance arrangements

Commercial insurance arrangements are based on information contained in the insurance manual for the period 30 June 2011 to 30 June 2012. We have been advised by TransGrid to provide estimates on the basis that these commercial insurance policies are in place, effective from June 2014 to the end of the five year projection period.

Cover is provided through an Industrial Special Risk (**ISR**) policy with cover up to \$400m in excess of the applicable deductible for any one event and an ISR policy for high value cables with cover up to \$20m. Under this policy, Property Insured is defined as follows:

“Property Insured” means all real and personal property of every kind and description (except as hereinafter excluded) belonging to the Insured or for which the Insured is responsible, or has assumed responsibility to insure prior to the occurrence of any damage, including all such property in which the Insured may acquire an insurable interest or for damage to which the Insured becomes responsible or assumes responsibility to insure, after the commencement of the Period of Insurance. It is understood and agreed that the term “personal property” shall include Money.

The deductible for cables is the greater of either \$1m or 5% of loss value. The main program operates with an annual aggregate deductible of \$2.5m for the period of insurance. Only the balances of losses that exceed a non-contributory amount of \$0.3m contribute towards the exhaustion of the annual aggregate deductible. Upon exhaustion of the annual aggregate deductible, the deductible reverts to \$0.3m each and every loss arising out of any one event. In addition, a crime policy also provides cover for employee theft.

Risk mitigation measures

In addition to insurances, TransGrid employ a comprehensive range of risk management strategies with regard to property as is well documented in their Network Management Plans, including:

- Asset maintenance and operating strategies
- Quality systems
- Emergency Management systems
- Strategies for Bushfire management

Self-Insurance Allowance

Given TransGrid's comprehensive loss history comprising of the attritional working losses, as well as the larger losses to date, we have solely relied on the historical losses to derive our self-insurance allowance. The claim and incident registers have been used to derive estimates of annual losses as at June 2014 for each of the future five years during the next regulatory reset period. The following approach has been used:

1. Index historical property losses to June 2014 values
2. These are separated into three types of losses: property damage, decontamination and theft losses
3. Overlay ground-up loss with commercial insurances
4. Derive a normalised level of forecast frequency based on historical occurrences
5. Derive a normalised level of forecast severity based on indexed below-deductible losses
6. Multiply the forecast severity and frequency to derive the expected annual retained loss value.
7. Total self-insurance allowance for property is summation of all three types of losses.

Property damage only

Based on below-deductible historical losses for property damage, we have derived an annual retained loss estimate of \$1.9m – see table 6.1.

Table 6.1 – Property losses from claims and incident register

Year ending June	Number of incidents	Number of losses	Total cost of losses (indexed to June 2014) (\$)
1996	4	3	657,586
1997	10	10	1,534,393
1998	8	8	486,311
1999	5	5	3,419,580
2000	7	6	2,625,822
2001	11	11	2,879,293
2002	6	6	563,654
2003	6	5	670,415
2004	4	4	1,156,514
2005	11	10	4,738,944
2006	7	5	2,058,623
2007	4	2	2,173,965
2008	4	4	1,092,370
2009	2	2	3,100,000
2010	3	3	455,025
2011	3	3	3,133,272
2012	7	6	464,288
2013	6	5	144,845
Totals	108	98	31,354,899

Average number of incidents (Forecast frequency)	6
Average cost per loss (Forecast severity)	319,948
Self-insurance allowance (frequency x severity)	1,919,688

Decontamination

In accordance with claim and incident registers TransGrid have also incurred costs associated with clean-up and decontamination following 3 significant incidents in the past 5 years, specifically – descriptions extracted from the incident register have been given in italics below:

1. *2009 - Explosive failure of transformer; clean-up costs totalling approximately \$1.4m*
2. *2011 - Reactor failed internally and 5,000 litres of oil discharged but contained on site; clean-up costs totalling approximately \$0.6m*
3. *2011 - Blackish liquid substance on cable tunnel floor; clean-up costs totalling approximately \$0.09m*

The above costs have been separated from property damage only losses. Land and water contamination or pollution clean-up are only subject to limited cover under TransGrid's commercial insurances, specifically, \$0.05m in excess of the deductible.

Accordingly after accounting for inflation to June 2014 values, an annual loss estimate of \$0.48m (approximately \$2.4m over five years) is recommended for inclusion as a component of TransGrid's self-insurance allowance.

Theft

Based on historical losses we arrive at an annual retained loss estimate of \$9.8k (Table 6.2), which we recommend for inclusion as a component of TransGrid's self-insurance allowance.

Table 6.2 – Theft losses from claims and incident register

Year ending June	Number of incidents	Total cost of losses (indexed to June 2014) (\$)
1996	0	0
1997	0	0
1998	0	0
1999	0	0
2000	0	0
2001	5	11,427
2002	6	2,733
2003	6	30,275
2004	13	41,480
2005	2	2,615
2006	0	0
2007	1	56,432
2008	0	0
2009	0	0
2010	1	0
2011	4	1,979
2012	1	1,402
2013	2	27,598
Totals	41	175,940

Average number of incidents (Forecast frequency) 2.28

Average cost per incident (Forecast severity) 4,291

Self-insurance allowance (frequency x severity) 9,774

In total we estimate an annual allowance of \$2.4m in self-insurance costs relating to losses due to property damage, decontamination and theft, as shown in the table below.

Table 6.3 – Property total self-insurance allowance \$

Year Ending June	Property	Decontamination	Theft	Total
2015	1,919,688	480,000	9,774	2,409,462
2016	1,919,688	480,000	9,774	2,409,462
2017	1,919,688	480,000	9,774	2,409,462
2018	1,919,688	480,000	9,774	2,409,462
2019	1,919,688	480,000	9,774	2,409,462

Cost Pass Through Mechanism

We are of the opinion that with appropriate insurance policies in place, a self-insurance allowance provides the most efficient approach for managing risk associated with property

losses below the insurance Limit of Liability. We do however consider it credible, though highly remote, that a catastrophic event impacting over a large area, could result in losses to TransGrid exceeding the insurance limits, such an example could be total loss of one or more substation, or substation-related assets, as well as damage to high value underground cables. We have recommended a number of events appropriate for the cost pass through, discussed and defined in Section Nine.

SECTION SEVEN

TOWERS AND LINES

Available data

Marsh has been provided with a claims and incident register containing losses from financial years 1996 – 2013. However after considering the relevance of past incidents compared to the current risk exposure, we have only relied on historical experience from the period between 1/07/2003 to the 30/06/2013.

The most significant incidents contained with the loss history include, all with CPI indexed values of greater than \$0.5m:

- 2008 - *Damage to Conductor & two Towers as a result of contact by an aircraft;*
- 2009 - *T/L tripped after 5 structures suffered storm damage; and*
- 2011 - *Line failure after collapse of two towers; storms in the area anticipated to have played a significant role.*

Insurance arrangements

TransGrid does not insure its Towers and Lines as per commercial insurance policies. This is consistent with our understanding of the approach taken by other Australian and New Zealand TNSPs – with the exception of Powerlink Queensland. This is in large due to the fact that insurance for these assets are either unavailable in most markets or available on terms that are restrictive and not commercially viable.

We have investigated the possibility of such cover for TransGrid's towers and lines assets – based on \$2m / \$10m Each and Every occurrence deductible and limit respectively, the indicative premium estimate is an annual premium of \$3.5m. We have compared this to the total estimated cost of self-insurance for Towers and Lines – see section below. The significantly less self-insurance costs reflect the external insurer's lack of appetite for these risks; also provide a sound justification for TransGrid's decision to self-insure its Towers and Lines assets, thus reflecting TransGrid's intention for an efficient cost recovery mechanism from its customers and end-users.

Self-Insurance Allowance

Incident registers have been used to derive estimates of annual losses as at June 2014 for each of the future five years during the next regulatory reset period. The following approach has been used:

1. Index historical losses to June 2014 values
2. Derive a normalised level of forecast frequency based on historical occurrences
3. Derive a normalised level of forecast severity based on indexed losses

4. Multiply the forecast severity and frequency to derive the expected annual loss value due to historical losses
5. We have included a component relating to events that may not be reflected in loss history (scenario losses)
6. Total self-insurance allowance is the summation of steps 4 and 5

Historical losses

Based on below-deductible historical losses we arrive at an annual retained loss estimate of \$0.39m (Table 6.1), which we recommend for inclusion as a component of TransGrid's self-insurance allowance.

Table 7.1 – Towers and Lines losses from incident register

Year ending June	Number of losses	Total cost of losses (indexed to June 2014) (\$)
2004	1	75,772
2005	0	0
2006	6	492,584
2007	2	29,720
2008	0	0
2009	5	768,757
2010	8	1,186,946
2011	3	134,072
2012	1	745,732
2013	9	495,493
Totals	35	3,929,077

Average number of losses (Forecast frequency)	3.5
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Average cost per loss (Forecast severity)	112,259
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Self-insurance allowance (frequency x severity)	392,908
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Scenario losses

In addition to the incidents reflected in the above register, Towers and Lines are considered to be vulnerable to catastrophic losses including bushfire, earthquake and external parties. As these risks are uninsured as per the commercial insurance policies, it is recommended that those catastrophic events resulting in damage below the materiality threshold of 1% of TransGrid's prescribed annual revenue, be accounted for through the self-insurance allowance – we have applied a uniform \$9m cap (based on an estimated 1% of the MAR) across the forecast five years for the purpose of this analysis.

Accordingly we consider it reasonable that an event with sufficient severity to approach the materiality threshold could occur once every 100 years. This is based on the following considerations:

- Only a relatively small amount of damage is required, i.e. approximately 10km of lines. The extent of TransGrid's total network is greater than 12,500km.
- Based on a statistical evaluation we consider it reasonable that such an event could be attributed a 0.01 annual probability or 1-in-100 year return period. This evaluation accounts for the balance of probabilities given no such events occur within the period of the available loss history when also accounting for the existence of other independent risks, also not observed in the loss history, and quantified as part of the self-insurance allowance.

Based on an annual probability of 0.01 we recommend an estimate of \$0.09m be included as a component of TransGrid's self-insurance allowance to account for events not reflected in the loss history.

Towers and Lines total

In total we estimate an annual allowance of \$0.48m in self-insurance costs relating to losses from Towers and Lines, as shown in the table below.

Table 7.2 – Tower and Line losses self-insurance allowance \$

Year Ending June	Historical losses	Scenario losses	Total
2015	392,908	90,000	482,908
2016	392,908	90,000	482,908
2017	392,908	90,000	482,908
2018	392,908	90,000	482,908
2019	392,908	90,000	482,908

Cost Pass Through Mechanism

We consider it credible that highly infrequent events have the potential to result in Tower and Line losses that exceed the 1% materiality threshold. Such events may include a major earthquake or bushfire event.

Due to the lack of available data and the very low probability of extreme losses reliable quantification is difficult. A cost pass through mechanism is likely to be the most effective approach for managing high severity and low probability risks. Accordingly we suggest a cost pass through mechanism be applied to Tower and lines losses exceeding the 1% materiality threshold resulting from earthquake or other events beyond TransGrid's control.

The potential severity of extreme loss events are likely to be beyond the control of the prudent operator as they are contingent upon factors associated with remote probabilities that are difficult to monitor and control.

In consideration of the above, we have recommended a number of events appropriate for the cost pass through mechanism. These nominated events, discussed and defined in Section Nine.

SECTION EIGHT

OTHERS

In terms of the remaining risks, we have condensed these into one risk grouping as they can be considered in totality. These are inclusive of the following risks:

- Motor Vehicle
- Contracts covered under Principal Arranged Insurance (**PAI**)
- Workers' Compensation (**WC**)
- Marine Cargo
- Corporate Travel
- Insurer Credit Risk
- Counterpart Credit Risk

Available data

Marsh has been provided with a claims and incident register containing claims against TransGrid from financial years 1996 – 2013. Records have been used from the period between 1/07/1995 to the 30/06/2013.

Insurance arrangements

We have been advised by TransGrid to provide estimates on the basis that these commercial insurance policies are in place, effective from June 2014 to the end of the 5 year projection period.

Self-Insurance Allowance

The claims and incident register has been used to derive estimates of annual losses as at June 2014 for each of the future five years during the next regulatory reset period. The following approach has been used:

1. Index historical losses to June 2014 values
2. Overlay ground-up losses with TransGrid's insurance program
3. Derive a normalised level of forecast frequency based on historical occurrences
4. Derive a normalised level of forecast severity based on indexed below-deductible costs
5. Multiply the forecast severity and frequency to derive the expected annual retained loss attributable to historical losses
6. We have also considered events that may not be reflected in the historical losses (scenario losses)

7. Total self-insurance allowance for others is the summation of steps 5 and 6

Historical losses

Based on below-deductible historical losses we arrive at an annual retained loss estimate of \$5.6k (Table 8.1), which we recommend for inclusion as a component of TransGrid's self-insurance allowance.

Table 8.1 – Other losses from claims and incident register

Year ending June	Number of losses	Total cost of losses (indexed to June 2014) (\$)
1996	1	16,125
1997	0	0
1998	1	1,585
1999	3	1,972
2000	0	0
2001	1	1,351
2002	0	0
2003	3	4,162
2004	0	0
2005	0	0
2006	0	0
2007	0	0
2008	2	46,862
2009	0	0
2010	0	0
2011	0	0
2012	1	27,620
2013	0	0
Totals	12	99,676

Average number of losses (Forecast frequency)	0.67
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Average cost per loss (Forecast severity)	8,306
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Self-insurance allowance (frequency x severity)	5,538
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Scenario losses

Workers' Compensation

Based on historical claims summary provided in an independent actuarial assessment, an estimate of 50 claims per year appears reasonable. It is assumed cover is provided with following retention structure:

- Excess is equivalent to first weeks wages each and every loss;
- Notification within 5 days waives excess.

We further assume:

- The notification period will exceed 5 days for 25% of claims; and
- The average weekly salary is \$1,200 for a TransGrid employee.

In light of the above assumptions an annual retained loss estimate of \$15k is recommended for inclusion as a component of TransGrid’s self-insurance allowance.

Insurer Credit Risk

TransGrid may suffer losses in the event that one of its insurers defaults. These losses may include:

- Loss of paid premiums for an unexpired period of cover; and
- An exposure for outstanding claims the insurer is unable to honour.

Examples, such as the collapse of HIH, suggest this represents a credible risk for the prudent operator. The following assumptions have been applied to calculate an estimate as part of TransGrid’s self-insurance allowance:

- Collapse of an insurer accounting for 50% of cover provided by TransGrid’s ISR policies.
- The insurer referred to above is assumed to have an AA Standard & Poor (**S&P**) credit rating, where the Cumulative Default Rate over a 5 year time horizon would be equivalent to S&P’s Australia and New Zealand Corporate Average Cumulative Default Rates (1981-2011) as shown in table 8.2 below.

Table 8.2 - Australia and New Zealand Corporate Average Cumulative Default Rates (1981-2011)

(%)	—Time Horizon (years)—				
	1	2	3	4	5
Australia and New Zealand					
AA	-	-	-	0.18	0.38
A	0.1	0.21	0.33	0.33	0.33
BBB	0.2	0.42	0.65	0.91	1.06
BB	1.91	3.41	5.12	7.88	8.88
B	6.67	14.26	19.16	23.14	25.93
Sources: Standard & Poor’s Global Fixed Income Research and Standard & Poor’s CreditPro®.					

- The insurer is assumed to default half-way through the policy period resulting in a loss equivalent to 50% of annual premium.
- Outstanding claims would be equivalent to the average of TransGrid’s historical losses on its ISR policy transferred to its insurers over the past ten years, equivalent to \$1.2m per year.

In light of the above assumptions, an annual loss estimate of \$1.3k is recommended for inclusion as a component of TransGrid's self-insurance allowance.

It is worth noting further, that based on the implementation of the Financial Services Act and the monitoring of insurers by the Australian Prudential Regulatory Authority (APRA) there is less likelihood of financial default by an Insurer authorised to do business in Australia.

Counterparty Credit Risk

TransGrid's revenue is received from distribution business, generators and large industrial customers directly connected to the network. TransGrid may suffer losses in the event that one of its counterparties defaults on the payment of an invoice. The following assumptions have been applied to calculate reasonable value for inclusion as part of TransGrid's self-insurance allowance:

- Government owned transmission businesses are attributed with AAA S&P credit rating – the risk of defaulting is generally considered negligible;
- TransGrid's largest counterparty, not fully government owned, can be attributed a AA S&P credit rating – TransGrid's annual exposure is \$3.5m;
- Credit is extended for the period of one month;
- It is assumed that the counterparties Cumulative Default Rate over a 5 year time horizon would be equivalent to Standard & Poor's Australia and New Zealand Corporate Average Cumulative Default Rates (1981-2011) as shown in table 8.2 above.

In light of the above assumptions an annual retained loss estimate of \$2.7k is recommended for inclusion as a component of TransGrid's self-insurance allowance.

Others total

In total we estimate an annual allowance of \$24.5k in self-insurance costs relating to losses from others in total, as shown in the table below.

Table 8.3 – Others loss self-insurance allowance \$

Year Ending June	Historical losses	Scenario losses	Total
2015	5,538	18,988	24,526
2016	5,538	18,988	24,526
2017	5,538	18,988	24,526
2018	5,538	18,988	24,526
2019	5,538	18,988	24,526

Cost Pass Through Mechanism

We consider it credible that highly infrequent events have the potential to result in others losses that exceed the 1% materiality threshold. These nominated events, discussed and defined in Section Nine.

SECTION NINE RESULTS

In total, we recommend TransGrid to adopt \$3.0m as an annual cost of self-insurance allowance for each of the forecast years in the upcoming regulatory reset period. Table 9.1 below provides a breakdown by four risk groupings. We have selected these groupings with consideration of the types of TransGrid's assets, risk exposure and their insured status (as per commercial insurance policies).

Table 9.1 – Total self-insurance allowance \$

Year Ending June	Liability	Property	Towers and Lines	Other	Total
2015	100,837	2,409,462	482,908	24,526	3,017,733
2016	100,837	2,409,462	482,908	24,526	3,017,733
2017	100,837	2,409,462	482,908	24,526	3,017,733
2018	100,837	2,409,462	482,908	24,526	3,017,733
2019	100,837	2,409,462	482,908	24,526	3,017,733
Total indexed to 30 June 2014 values					\$15,088,665

We must note our estimated self-insurance allowance is the expected annual cost of funding future losses, indexed to 30 June 2014 values (i.e. just prior to the commencement of the upcoming regulatory period) and is exclusive of any allowance for volatility, cost of capital or expenses relating to settlement of losses. For this reason, they are most likely lower than cost of any commercial insurances, as insurers would most likely be pricing for expected cost of losses, as well as expenses and profit margin.

Additionally, we have recommended a number of events appropriate for the cost pass through mechanism. These are discussed and defined in detail in Section Ten.

SECTION TEN

COST PASS THROUGH

Overview

In relation to consideration of events to be nominated for the cost pass through mechanism, we have adopted a number of principles as follows:

- Quantification of such an event, by attaching frequency or severity, cannot be ascribed by reasonable means and is subject to significant uncertainty;
- There has been no past incidences of similar type of such event, or similar events of such magnitude for TransGrid, hence could be regarded as an unforeseen event; and
- Such an event is beyond the control of TransGrid, or TransGrid has taken appropriate and reasonable means in order to prevent or reduce probability of its occurrence.

We thus believe in circumstances given the above, the adoption of the cost pass through mechanism will likely be the most effective approach in achieving on an ex-ante basis, an adequate balance between:

- Having the incentive mechanisms in place to ensure that prices for consumers are no more than necessary to provide an appropriate level of service;
- Whilst still providing TransGrid with a reasonable opportunity to recover efficient costs associated with events that are outside of their reasonable control.

It is nonetheless evident from TransGrid's numerous risk mitigation mechanisms that reasonable steps are taken to manage high severity risks including compliance with relevant acts and regulations. The risk management systems are well documented in TransGrid's Network Management Plans and demonstrate non-reliance on risk transfer mechanisms including external insurances and current pass through mechanism. These measures are thereby taken as evidence of TransGrid's avoidance of moral hazard or reputational harm under the provision of the effective use of a cost pass through mechanism.

Given the above, we have recommended four events appropriate for the cost-pass through mechanism. We also note a materiality threshold applies before TransGrid could consider recovering its costs from the cost pass through mechanism. The threshold, being 1% of TransGrid's prescribed annual revenue, equates to approximately \$8m for each occurrence. These events are defined in the following paragraphs:

Insurance Cap Event

Whereby:

1. TransGrid makes a claim or claims and receives a payment or payments under a relevant insurance policy,

2. TransGrid incurs costs beyond the relevant policy limit, and
3. The costs beyond the relevant policy limit materially increases the costs to TransGrid of providing prescribed transmission services.

Natural Disaster Event

Any major fire, flood, wind, earthquake or other natural disaster beyond the reasonable control of TransGrid that occurs during the 2014-19 regulatory control period and materiality increases the cost to TransGrid providing prescribed transmission services.

A minimum eligibility threshold for consideration is that the eventual impact (in terms of material damage and business interruption costs), net of any insurance proceeds, needs to be at least 1% of TransGrid's prescribed annual revenue.

Terrorism Event

An act (including, but not limited to, the use of force or violence or the threat of force or violence) of any person or group of persons (whether acting alone or on behalf of or in connection with any organisation or government), ethnic or similar purposes or reasons (including the intention to influence or intimidate any government and/or put the public, or any section of the public, in fear) and which materially increases the costs to TransGrid of providing prescribed transmission services.

We note the costs to TransGrid considered in this event should, in theory be net of any recoveries from either relevant insurance policies and / or the Australian Reinsurance Pool Corporation (ARPC) under the Terrorism Insurance Act 2003.

Insurer Default Event

Any event that results in TransGrid unable to recover external insurance proceeds to the amount that exceeds the 1% materiality threshold.

This is considered to be beyond the reasonable control of TransGrid in the sense that it has conducted adequate due diligence in regards to procurement of its insurance and insurance brokers and ensuring the insurer counterparties are of a minimum financial condition dependent on ratings set by external rating agencies.

Cyber Event

Any event that results in TransGrid in direct or third party losses to its digital or network assets as a result of cyber-related external attack. In order for the event to be considered eligible for cost pass through, the impact to TransGrid, net of any external insurance or any other third party proceeds, needs to exceed the 1% materiality threshold.

This is considered to be beyond the reasonable control of TransGrid as it has reasonable controls and process in place to ensure the security of its digital and network assets.

Environmental Contamination Event

Any event that results in costs incurred by TransGrid as a result of environmental contamination by either TransGrid, its contractors or third parties to be greater than the 1% materiality threshold.

Reference to other TNSPs

We also note the first three of the above events nominated for cost pass through are similar to those nominated in the AER's draft decision released on 30 August 2013 for SP AusNet's transmission determination 2014-15 to 2016-17. This is highlighted in the SP AusNet's draft decision document published on the AER website.

PART B: INSURANCE COSTS ESTIMATE

SECTION ELEVEN

PURPOSE AND SCOPE

Marsh was engaged on 26 August 2013 to undertake a review of TransGrid's insurance-related costs in preparation for the upcoming five-year regulatory control period commencing 1 July 2014. The outcomes are intended to form the basis of TransGrid's prudent revenue submission to the AER.

As described in the Marsh submission to TransGrid's quotation specification titled "Q168/13: Financial Management / Insurance and Self Insurance Assessment " dated August 2013, one of the proposed services was to estimate the cost of the insurance premiums payable during this regulatory period (the relevant excerpt of the submission has been replicated in Appendix Two for reference). This report "Estimation of Insurance Premiums (2014/15 to 2018/19)" (the Report) constitutes the deliverable of these services.

The Report provides estimates of the total premium payable by TransGrid across the five-year period commencing 1 July 2014, with separate estimates for each year. The premiums constitute base premiums only and do not include any allowance for taxes or levies. However, details of estimated taxes and levies are contained in Appendix D.

The premium estimates only consider costs relevant to TransGrid's Prescribed Services role as a TNSP and are intended to reflect TransGrid's expected insurance programme during the regulatory period. As a result, our estimates incorporate allowances for the following insurance classes:

- Industrial Special Risks (ISR)
- Public & General Liability (Combined Liability)
- Workers' Compensation (WC)
- Construction Insurance (PAI) & Asbestos Liability
- Motor Vehicle
- Directors' and Officers' (D&O)
- Employment Practices Liability (EPL)
- Crime
- Travel
- Marine Cargo

Please note that insurance for Towers and Lines Industrial Special Risks insurance was also investigated as detailed in Section Nineteen, however, due to a cost benefit analysis of premium versus coverage provided, it is recommended that TransGrid continue to self-insure this exposure at the current time.

SECTION TWELVE

APPROACH

We have considered each insurance class separately to derive standalone premium forecasts based on the individual circumstances of that insurance class.

Our estimated premium forecasts have been indexed to 30 June 2014 values. Also note that as TransGrid's program has been underwritten by the TMF for the period 2012/2013 and 2013/2014 we have estimated these as open market premiums.

In deriving our estimates for each insurance class, we have considered the following factors influencing premium levels:

- Historical changes in insurance cover
- Historical variation in exposure
- Historical claims experience
- Forecasts of exposure
- Economic inflationary impacts
- Expected market outlook
- Other historical market factors (e.g. changes in insurers, changes in insurer profit margins, industry claims experience, etc.) to the extent that historical premium trends are observed which cannot be directly attributable to other factors.

A high-level framework of the approach undertaken for each insurance class is summarised as follows:

1. Collate information on the historical insurance programme structure, exposure and premium.
2. Investigate the relationship between historical premium movements and changes in various drivers such as changes in exposure growth, deductibles and limits.
3. Estimate the historical premiums in the insurance market to reflect the insurance programme structure as at 2013/14.
4. Where a clear relationship is identified, forecast premiums incorporating expected changes in exposure growth.
5. Where a clear relationship cannot be identified, forecast premiums by making explicit assumptions which factor in expected inflationary impacts and market rate movements.

SECTION THIRTEEN

RESULTS – INDUSTRIAL SPECIAL RISKS

Industrial Special Risks insurance provides cover for loss or damage to TransGrid owned property subject to policy exclusions.

Loss Experience

The claims history utilised to undertake this review was as provided by TransGrid. A summary by year of the claims since 2008 is provided in Table 13.1. This claims history is provided based on the current deductibles as detailed below and only takes into considerations claims in excess of \$300,000:

Table 13.1 – Industrial Special Risks Claims History

Policy Period	Number of Claims	Gross Incurred	Net Incurred (by Insurer)
2013-2014	0	Nil	Nil
2012-2013	1	Nil	Nil
2011-2012	0	Nil	Nil
2010-2011	2	\$3,661,696	\$561,696
2009-2010	2	Nil	Nil
2008-2009	1	\$8,868,425	\$6,100,000

Coverage Assumptions

Table 13.2 – Industrial Special Risks Coverage Assumptions

Limit Selection	<p>Current Limit:</p> <p>\$400m in excess of the applicable Deductibles any one loss or series of losses arising out of any one event.</p> <p>Limit Selection:</p> <p>Largest single locations:</p> <ul style="list-style-type: none"> • Sydney South Substation \$177.1m • Haymarket Substation and Cable 42: \$136.9m + \$165m =
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	<p>\$301.9m</p> <p>Note: to receive a premium benefit the limit would need to reduce to \$200m each and every occurrence. We estimate this would result in premium saving of 5-7.5%.</p> <p>Based on the aggregate exposure \$200m would not be considered an adequate limit so we recommend maintaining the \$400m limit, as there would be no premium benefit to reducing the limit.</p>
Deductibles	<p><u>Previous Deductibles:</u></p> <p>\$2.5m each and every loss arising out of one event and in the aggregate for the Period of Insurance. Only the balance of losses that exceed a non-contributory amount of \$0.3m are to contribute towards the exhaustion of the annual aggregate deductible. Upon exhaustion of the annual aggregate deductible, the deductible will revert to \$0.3m each and every loss arising out of any one event.</p> <p><u>Alternative Deductible Structure</u></p> <p>The adoption of an alternative deductible structure is likely; however, would produce similar pricing so have not been detailed any further.</p>
Key Coverage	<p>Decontamination Costs \$15m</p> <p>Removal of Debris \$25m</p> <p>Earth Movement Full Limit</p> <p>Flood Full Limit</p> <p>Operational Testing \$15m</p> <p>Property Undergoing construction, erection and alteration \$25m</p> <p>Machinery and Boiler \$75m</p> <p>Gross Earnings \$15m</p> <p>Additional Expense \$20m</p>

Asset Base Assumptions

We have used the following asset values in our premium estimations as provided by TransGrid.

Table 13.3 – Asset Values

Year	Existing Asset Base (excluding Transmission Lines)	Additional Asset Base (excluding Transmission Lines)	Total Asset Base (excluding Transmission Lines)
2012/2013	4,563.6m	486,510m	5,050.1m
2013/2014	5,176.3m	590,899m	5,767.2m
2014/2015	5,911.4m	351,741m	6,263.2m
2015/2016	6,419.7m	424,256m	6,843.9m
2016/2017	7,015.1m	543,657m	7,558.7m
2017/2018	7,747.7m	447,042m	8,194.8m
2018/2019	8,399.6m	216,425m	8,616.1m

Projection Approach

Our ISR premium projections are largely based on an exposure method, which utilises a rate applied to the insurable values. We have selected this method given the claims experience and the expectation that changes in ISR premiums are related to movements in Insured Value. We note that ISR risks are often priced as a rate per Insured Value. By comparing normalised historical premiums to historical Insured Values, we can see that the two items move generally together which supports our expectation of the relationship.

We have been provided by TransGrid a forecasted asset base of Insured Values for the period 2014-2019 (as detailed above which is effectively increased each year by 2.5% to reflect replacement values and then increased by the additional capital expenditure amounts during the year. These will form the exposure unit for our premium projection.

In terms of future market movements, the most recent Marsh global insurance market briefing indicates property rates may increase up to 10% in the markets that TransGrid participate in. We have smoothed this increase over the next four years, i.e. at 2.0% p.a.

Premium projections

Table 13.4 below shows the historical and our estimated future premium projections for ISR.

Table 13.4 – Industrial Special Risks Premium Projections

Policy Year	Projection Year	Base premium	% Change in asset values	% Change due to Inflation	% Change due to Market
2008/2009	Actual	\$ 2,329,945			
2009/2010	Actual	\$ 2,445,958			
2010/2011	Actual	\$ 2,615,696			
2011/2012	Actual	\$ 2,980,175			
2012/2013	Open Market				
	Estimate	\$ 2,651,290			
2013/2014	Open Market Estimate	\$ 3,027,794			
2014/2015	1	\$ 3,288,155	2.5%	0.00%	2.00%
2015/2016	2	\$ 3,664,955	2.5%	0.00%	2.00%
2016/2017	3	\$ 4,128,661	2.5%	0.00%	2.00%
2017/2018	4	\$ 4,565,578	2.5%	0.00%	2.00%
2018/2019	5	\$ 4,896,301	2.5%	0.00%	2.00%

SECTION FOURTEEN

RESULTS – COMBINED LIABILITY

Loss Experience

There has only been one claim in the past five years payable by the insurance market. The current premium level is likely to reflect the low claims experience of TransGrid and so any deterioration in claims would be expected to increase premium costs.

Coverage Assumptions

Table 14.1 – Combined Liability Coverage Assumptions

Limit Selection	Previous Limit:
	<p>\$600m in respect of each claim or series of claims arising out of any one Occurrence in respect of:</p> <ul style="list-style-type: none"> • General Liability • Non-Owned Aircraft Liability • Automobile Liability • Failure to Supply <p>\$50m in respect of each claim or series of claims arising out of any one Occurrence in respect of:</p> <ul style="list-style-type: none"> • Failure to Supply - Pure Financial Loss <p>\$600m in respect of each claim or series of claims arising out of any one Occurrence, and in the annual aggregate in respect of:</p> <ul style="list-style-type: none"> • Products Liability / Completed Operations • Pollution Liability • Electromagnetic Radiation • Bushfire Liability <p>\$90m in respect of each claim or series of claims arising out of any one Occurrence, and in the aggregate during any one Period of Insurance in respect of:</p> <ul style="list-style-type: none"> • Professional Liability

	<p>Limit Selection:</p> <p>Premium projections are based on the existing \$600m limit. Marsh recommends a Maximum Foreseeable Loss (MFL) Study is undertaken in order to assess the ongoing adequacy of this limit.</p>
<p>Deductibles</p>	<p>Deductibles:</p> <p>The first \$0.25m in respect of each claim or series of claims arising out of any one Occurrence except for :</p> <ul style="list-style-type: none"> • Automobile \$30m • Bushfire Liability \$1m • Social club \$0.02m • Contract Works \$50m any one Occurrence and in the annual aggregate during each 12 month period of the Insured's Contract Works policy which in turn is in excess of \$0.05m in respect of Worker to Worker Liability, Products Liability and Underground Services, \$0.01m in respect of any Other Liability

Projection Approach

Our liability premium projections are largely based on our review of the risk exposures and benchmarking in line with your peers. Given the nature of TransGrid's operations within a regulatory environment, its revenue, which is often used as measure of exposure for other types of businesses for liability insurance classes, does not appear to be a good measure in this case. Hence we have relied solely on our understanding of the insurance market in particular in respect of other Transmission Networks Service Providers, incorporating any future economic inflation and market movements.

We should note that all premium estimates are based on the \$600m limit of liability.

In terms of future market movements, the most recent Marsh global insurance market briefing indicates liability premiums may decrease up to 10% in the markets that TransGrid participates in. We also note that as previously indicated we are in the soft stage of the market cycle and this is likely to continue for the majority of the reset period and is reflective of this in our premium projections.

Premium projections

Based on our approach, we have provided an immediate reduction which would be maintained for the first three years with an allowance for changes in market conditions over the final two years of the reset period.

Table 14.2 below shows the historical and our estimated future premium projections for Liability.

Table 14.2 – Combined Liability Premium Projections

Policy Year	Projection Year	Base premium	% Change due to Inflation	% Change due to Market
2008/2009	Actual	\$ 1,418,930		
2009/2010	Actual	\$ 1,476,575		
2010/2011	Actual	\$ 1,601,855		
2011/2012	Actual	\$ 1,529,750		
2012/2013	Open Market Estimate	\$ 1,529,750		
	Open Market Estimate			
2013/2014	Estimate	\$ 1,529,750		
2014/2015	1	\$ 1,200,000	0.00%	0
2015/2016	2	\$ 1,200,000	0.00%	0
2016/2017	3	\$ 1,200,000	0.00%	0
2017/2018	4	\$ 1,242,000	0.00%	3.50%
2018/2019	5	\$ 1,273,050	0.00%	2.50%

SECTION FIFTEEN

RESULTS – MOTOR VEHICLE

Loss Experience

The claims history utilised to undertake this review was as provided by TransGrid. A summary by year of the claims since 2003 is demonstrated as follows. This claims history is provided based on the current deductible/franchise arrangement as detailed below.

Table 15.1 – Motor Vehicle Claims History

Policy Period	Incurred
2013-2014	Estimated based on average annual cost (past 3 years 2009-2012) \$468,967
2012-2013	\$266,037 (as at May 2013)
2011-2012	\$406,920
2010-2011	\$573,808
2009-2010	\$426,172
2008-2009	\$507,014
2007-2008	\$396,653
2006-2007	\$486,147
2005-2006	\$325,724
2004-2005	\$520,212
2003-2004	\$236,757

Coverage Assumptions

Table 15.2 – Motor Vehicle Coverage Assumptions

Limit Selection	Previous Limit:
	Section 1: Damage – Market Value and/or Declared Values for Larger Vehicles
	Section 2: Liability - \$30m
	Limit Selection:
	As above, but on declared values basis for larger vehicles

Deductibles	Previous Deductibles: Nil
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Current Motor Vehicle Listing by Category

Table 15.3 – Motor Vehicle Unit Numbers

Vehicle/Plant Category	Number of Vehicles
Sedans	62
Light Commercials	169
Off Road Vehicles < 2 tonne	326
Trucks > 2 tonne (incl. off road)	51
Prime Movers	6
Special Vehicles (Cranes etc)	11
Misc. Plant (Graders, forklifts)	207
Heavy Trailers	22
Light Trailers	276
TOTAL	1,130

Projection Approach

Our motor premium projections are largely based on analysis of the estimated rates per vehicle type, and adjusting the historical premiums to incorporate the most recent fleet profile.

Premium projections

Table 15.4 – Motor Vehicle Premium Projections

Policy Year	Projection Year	Base premium	% Change due to Rate Movement	% Change due to Inflation	% Change due to Market
2008/2009	Actual	\$ 75,000			
2009/2010	Actual	\$ 450,000			
2010/2011	Actual	\$ 580,015			
2011/2012	Actual	\$ 505,000			
2012/2013	Open Market Estimate	\$ 631,200			
	Open Market Estimate	\$ 631,200			
2013/2014	Estimate	\$ 631,200			
2014/2015	1	\$ 631,200	0.00%	0.00%	0.00%
2015/2016	2	\$ 631,200	0.00%	0.00%	0.00%
2016/2017	3	\$ 631,200	0.00%	0.00%	0.00%
2017/2018	4	\$ 631,200	0.00%	0.00%	0.00%
2018/2019	5	\$ 631,200	0.00%	0.00%	0.00%

SECTION SIXTEEN

RESULTS – WORKERS’ COMPENSATION

Loss Experience

Incurred claims as per the Actuarial Report provided for the 2011-2012 period and the claims report from the Treasury Managed Fund (TMF) for 2012-2013 have been relied on for the purpose of the following premium indications.

Coverage Assumptions

1. The assessment of a premium and premium rate in NSW is a set formula based on claims and wages for the last 2 to 3 years. - As such there is no room for negotiation on rates between insurers.
2. This scenario is quite unique in that you have two claims periods under different insurance arrangements, one being self insurance, the other TMF.
3. Not knowing the timeframe of or when TransGrid needs to transition to a conventional arrangement, we are limited in the data we can rely upon. As such we have had to make some assumptions with the information we have used. The calculations we have completed reflect a premium and premium rate had TransGrid moved into a conventional arrangement at June 30 2014.

Projection Approach

To estimate premiums applicable for Workers’ Compensation in NSW, WorkCover will take into consideration:

- Claims History – although given the previous arrangements of Self-Insurance and TMF the figures applicable may need to be determined through discussions between TransGrid and WorkCover in regards to an 'appropriate' figure (based on the outstanding incurred costs).
- Discussion between WorkCover NSW and the employer on 'agreeable claims experience' may result in the claims cost we have applied changing, as they are not costs that have previously impacted WorkCover NSW (in terms of the Scheme), and have been a direct cost to TransGrid

The calculation we have completed we would consider 'worst case scenario' as these claims may not (subject to the discussion between WorkCover and TransGrid) be used in the future.

Premium projections Table 16.1 – Workers’ Compensation Premium Projections

Policy Year	Projection Year	Base premium	% Change in wages	% Change due to Inflation	% Change due to Market
2014/2015	1	\$ 1,099,641	2.5%	0.00%	0.00%
2015/2016	2	\$ 1,127,132	2.5%	0.00%	0.00%
2016/2017	3	\$ 1,155,310	2.5%	0.00%	0.00%
2017/2018	4	\$ 1,183,489	2.5%	0.00%	0.00%
2018/2019	5	\$ 1,213,076	2.5%	0.00%	0.00%

SECTION SEVENTEEN

RESULTS – CONTRACT WORKS

This section includes Contract Works Material Damage, Contract Works Public Liability and Asbestos Liability Principal Arranged Insurance (PAI) policies.

Loss Experience

Nil loss experience over the past five years.

Coverage Assumptions

Table 17.1 – Contract Works Coverage Assumptions

Limit Selection	<p>Previous Limit:</p> <p>All Contracts with a Total Contract Value of less than \$50m</p>
Deductibles	<p>Previous Deductibles:</p> <p>\$0.01m per Occurrence</p>
Key Coverage	<p>Contract Works but excludes Existing Structure and Constructional Plant, Tools & Equipment.</p> <p>Removal of Debris \$10m</p> <p>Inland Transit \$10m</p> <p>Off-Site Storage Limit \$15m</p> <p>Additional Increased Cost of Working / Air Freight Charges \$10m</p> <p>Maximum Construction Period 24 months</p> <p>Maintenance Period 36 months any one contract</p> <p>Testing and Commissioning 3 months</p>

Table 17.2 – Contract Works Liability Coverage Assumptions

Limit Selection	Previous Limit: \$100m any one Occurrence but limited to \$100m any one Occurrence and in the aggregate in respect of Completed Operations and Products Liability.
Deductibles	Previous and Recommended Deductibles: \$0.01m per Occurrence inclusive of costs and expenses except for Worker to Worker which is \$0.05m per Occurrence inclusive of costs and expenses
Key Coverage	Liability for: (a) Personal Injury (b) Property Damage (c) Advertising Injury (d) Interference with traffic or to property or the enjoyment of use thereof by obstruction, trespass, loss of amenities, nuisance

Projection Approach

Our projection approach is based on applying a base rate to the estimated construction activity over the reset period.

Contract Values are expected to be as follows, which is based on a 2.5% increase on the declared project values on a year on year basis.

Premium projections

Table 17.3 – Contract Works, Contract Works Liability and Asbestos Liability Premium Projections

Policy Year	Projection Year	Contract Works Material Damage Base Premium	Contract Works Public Liability Base Premium	Asbestos Liability Base Premium	% Change in contract values	% Change due to Inflation	% Change due to Market
2012/2013	Estimated Actual	\$ 609,632	\$ 799,902	\$ 45,000			
2013/2014	Estimated Current	\$ 624,873	\$ 819,899	\$ 45,000	2.5%		
2014/2015	1	\$ 640,495	\$ 840,397	\$ 45,000	2.5%	0.00%	0.00%
2015/2016	2	\$ 656,507	\$ 861,407	\$ 45,842	2.5%	0.00%	0.00%
2016/2017	3	\$ 672,920	\$ 882,942	\$ 45,842	2.5%	0.00%	0.00%
2017/2018	4	\$ 689,743	\$ 905,015	\$ 45,842	2.5%	0.00%	0.00%
2018/2019	5	\$ 706,986	\$ 927,641	\$ 45,842	2.5%	0.00%	0.00%

SECTION EIGHTEEN

RESULTS – OTHERS COMBINED

We have chosen to combine this section of the report for the remaining seven insurance classes. These make up approximately 5% of the total premium for TransGrid. The insurance classes include:

- Directors' and Officers' (**D&O**)
- Employment Practices Liability (**EPL**)
- Crime
- Travel
- Marine Cargo

Projection Approach

For these classes, we have adopted a simple approach in applying a flat annual rate of inflation of 2.5% to June 2014. In terms of future market movements, we have kept these constant at 0% as there is not expected to be major fluctuations in the cost of these insurances.

Premium projections

Based on our approach, the estimated annual increase in premiums for these seven insurance classes equate to the assumed 1.9% p.a. rate, indexed to June 2014 values in 2013/14 years then no change for remaining forecast years.

Table 18.1 – Premium Projects (Other Classes)

Policy Year	Projection Year	D&O Base Premium	EPL Base Premium	Crime Base Premium	Travel Base Premium	Marine Cargo Base Premium	% Change due to Inflation	% Change due to Market
2008/2009	Actual	\$ 187,300	\$ 14,130	\$ 18,000	\$ 6,194	\$ 9,000		
2009/2010	Actual	\$ 187,809	\$ 22,475	\$ 19,000	\$ 7,458	\$ 6,900		
2010/2011	Actual	\$ 184,735	\$ 20,000	\$ 20,000	\$ 7,458	\$ 6,900		
2011/2012	Actual	\$ 188,025	\$ 21,000	\$ 21,000	\$ 14,805	\$ 11,000		
2012/2013	Estimated	\$ 190,000	\$ 22,000	\$ 22,000	\$ 15,000	\$ 10,000		
2013/2014	Estimated	\$ 190,000	\$ 23,000	\$ 23,000	\$ 15,000	\$ 10,000		
2014/2015	1	\$ 190,000	\$ 23,000	\$ 23,000	\$ 15,000	\$ 10,000	0.00%	0.00%
2015/2016	2	\$ 193,553	\$ 23,430	\$ 23,430	\$ 15,281	\$ 10,187	0.00%	0.00%
2016/2017	3	\$ 193,553	\$ 23,430	\$ 23,430	\$ 15,281	\$ 10,187	0.00%	0.00%
2017/2018	4	\$ 193,553	\$ 23,430	\$ 23,430	\$ 15,281	\$ 10,187	0.00%	0.00%
2018/2019	5	\$ 193,553	\$ 23,430	\$ 23,430	\$ 15,281	\$ 10,187	0.00%	0.00%

SECTION NINETEEN

OTHER INSURANCES INVESTIGATED

Towers and Lines – Industrial Special Risks

Covering

Industrial Special Risks cover for above ground towers and lines

Limit

Maximum Foreseeable Loss Study to be undertaken, but following indication based on a \$10m each and every occurrence limit.

Deductibles

Estimated at \$2m each and every occurrence

Premium Rate

Estimated Rate of 0.02968%

Premium Estimate

Based on current values of \$11.752m = \$3,487,846 plus terrorism and statutory charges.

Recommendation

Based on a cost benefit analysis of the above proposed premiums, it is recommended that TransGrid continue to self-insurance the Poles and Lines exposures.

APPENDIX A

CONSULTANT CVs

JOANNE SILBERBERG

Experience

- She has been involved in the insurance risk management industry since 2004, when she commenced on the Marsh Graduate program, after completing a double degree in International Business and Law. She has accumulated experience in several industry sectors, in particular, Energy (incorporating Power and Utilities, Oil and Gas and Renewable Energy), Mining, Construction and global programs.
- She has extensive experience in account managing and arranging risk financing programs for power, oil and gas and utility companies.
- She has particular experience with Electricity Transmission and Distribution having serviced TNSP's and Distributors in Queensland, New South Wales and South Australia.

Professional Qualifications

- Australian and New Zealand Institute of Insurance and Finance (Fellow)
- National Insurance Brokers Association (Associate Member)
- Certified Insurance Professional
- Graduate Diploma of Financial Services (Insurance)
- Bachelor of Laws
- Bachelor of Business (International Business)

Experience

Ben's current role involves quantitative analysis of insurance-related and self-insurance costs for Marsh Australia, New Zealand and Asia Pacific clients. This includes the review of insurance-related costs for an Australian TNSP for regulatory submission to the AER.

Prior to joining Marsh, he has worked in risk management related roles in varying capacities. These include:

- Self-insurance quantification and actuarial reviews for several Australian self-insurance funds
- Risk quantification and Economic Capital Modelling for an Australian based captive reinsurer
- Development of risk appetite, Enterprise Risk Management (ERM) framework for Tokyo-based insurer

Professional Qualifications

- Institute of Actuaries of Australia (Fellow)
- Singapore Actuarial Society (Fellow)
- Bachelor of Commerce in Actuarial Studies
- Bachelor of Science in Statistics

Experience

Gary is a Consultant for the Business Risk Consulting team in Brisbane. Gary specialises in risk analytics, computer simulation and stochastic modelling. He has conducted quantitative modelling for a range of industries and government organisations throughout Australasia. Gary is experienced in risk modelling and analysis including:

- Qualification and quantification of enterprise wide risks
- Compilation of corporate risk profiles
- Modelling risk retention options and comparative analysis of insurance strategies including Total cost of Risk and Risk
- Adjusted Return on Capital approaches
- Modelling and analysis of Probable Maximum Loss and Maximum Foreseeable Loss scenarios
- Developing optimisation models to assist with budget allocation regarding Risk Management and insurance
- Development of predictive analytics models

Recent projects include:

- Development of stochastic models to assess Limits of Liability for Distribution and Transmission networks
- Development of Economic Cost of Risk models for multinational forestry investment funds
- Providing Economic Cost of Risk and Risk and Adjusted Return on Capital analysis incorporating natural catastrophe and bushfire simulation models
- Developing predictive analytics models for WH&S data from a major financial institution

Professional Qualifications

- Bachelor of Arts - studies in Mathematics and Philosophy
- Currently undertaking postgraduate studies to attain accreditation with the Statistical Society of Australia.

APPENDIX B

DATA

For the purpose of this review, we have been provided by TransGrid a comprehensive database of historical self-insured and insured losses. Their reliances have been well described in the main section of the report. We are able to provide the original databases and our workings upon request. The following are a qualitative description of any other information we have relied upon for this report.

Historical Premiums

TransGrid has provided historical premiums for all insurance classes for policy years 2008/09 to 2011/12.

While base premiums and total premiums including charges such as GST, levies and stamp duty have been provided, we have only utilised base premiums above. A full summary, including charges, of the estimated premiums are shown in Appendix D.

Historical Claims

We have been provided with claims histories for each insurance class for policy years 1994/1995 to 2012/13.

Historical Insurance Cover

We received detail around the deductibles and limits for the majority of insurance classes for the active policies from 2009-2012. This includes the relevant deductible and limit for sections within policies.

Note that for some insurance classes, insurance cover was not obtained for all five years:

- Asbestos Liability from 2012

While coverage has for the most part remained stable across the last five years, material changes to the programme include:

- Inclusion of cover for Cables under the ISR program

Historical Exposure Indicators

For years 2008/09 to 2013/14 we have obtained:

- Total declared asset values for ISR
- Number of declared motor vehicles

Forecast Economic Indicators

To adjust for inflationary impacts, TransGrid has assumed expected increases of 2.5% in the Consumer Price Index (**CPI**) for all years from 2014/15 to 2018/19. We assume this figure is also applicable for 2013/14.

APPENDIX C
ANALYSIS OF RISKS

Appendix C – Analysis of Risks

This paper expands upon the Analysis of Risks for Revenue Reset provided by TransGrid and reflects updates following consultation with TransGrid management on the 16 September 2013 and a review of existing TransGrid Risk Registers. It uses risks covered in the previous Self Insurance Risk Quantification report (SIQ report) 2008, existing risk data and adds commentary based on discussions with TransGrid.

Risk	Description	Workshop Commentary 2013	Treatment - 2013 report
Asbestos	The risk that TransGrid is found to be liable for claims related to the impact that asbestos, has, or previously had, on the health of its employees and third parties.	Exposure through: <ul style="list-style-type: none"> – working on greenfield sites; – waste dumps; – old cable pipes. <p>Some previous workers comp claims.</p>	<ol style="list-style-type: none"> 1. Coverage through liability insurance program and worker comp insurance. 2. Below deductible costs covered by Self-insurance allowance 3. Via nominated events for the cost pass through mechanism: <ol style="list-style-type: none"> 3.1. Insurance Cap Event; 3.2. Environmental Contamination Event.
Electro Magnetic Fields (EMF)	The two key risks to TransGrid in relation to EMF are: <ul style="list-style-type: none"> • That a linkage is found between EMF and adverse health impacts such as childhood leukaemia and other cancers; and • That the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) draft standard on EMF may inhibit TransGrid’s ability to undertake work, due to the potential exposure to EMF of its employees and contractors. 	No evidence has come forward to suspect change in exposure.	<ol style="list-style-type: none"> 1. Coverage through liability insurance program and worker comp insurance. 2. Below deductible costs covered by Self-insurance allowance 3. Via nominated events for the cost pass through mechanism: <ol style="list-style-type: none"> 3.1. Insurance Cap Event.
Business Continuity	Business continuity risk relates to future incidents or events that could significantly impact upon TransGrid’s	<u>Cyber Security</u> Potential threats include a SCADA attack	<ol style="list-style-type: none"> 1. Some cover may be provided through liability and property insurance program. 2. Below deductible and Towers & Lines losses

Appendix C – Analysis of Risks

Risk	Description	Workshop Commentary 2013	Treatment - 2013 report
	<p>ability to continue normal business operations either in a specific region, following a localised event, or across their entire region, following a more widespread event. Examples include, but are not limited to:</p> <ul style="list-style-type: none"> • Cyber Security • Tsunami; • Tropical cyclones; and • Pandemic illnesses. 	<p>(e.g. Stuxnet). This could have significant impact on the network.</p> <p><u>Natural Disaster</u> Events such as a storm cell may have a more localised impact.</p> <p>Approximately 6 substations identified as 1 in 100 year flood areas. Flood may result in inundations, though no anticipated isolation or failure to / loss of supply.</p> <p>2012 flooding resulted in no significant losses.</p>	<p>accounted for within self-insurance allowance.</p> <p>3. Via nominated events for the cost pass through mechanism:</p> <p>3.1. Insurance Cap Event; 3.2. Natural Disaster Event; 3.3. Terrorism Event; and 3.4. Cyber Event.</p>
Fraud Risk	<p>TransGrid faces the risk of acts of fraudulent activity including: Theft, False Accounting, Bribery and Corruption, Deception and Collusion. This risk occurs, notwithstanding the fact that TransGrid has in place sound systems of internal control, proportional to risk.</p>	<p>There has been an expenditure increase in since previous forecast however overall TransGrid considers no significant change in exposure.</p>	<p>1. Coverage through liability and crime insurance program.</p> <p>2. Below deductible costs covered by Self-insurance allowance.</p> <p>3. Via nominated events for the cost pass through mechanism: 3.1. Insurance Cap Event.</p>
Environmental contamination	<p>TransGrid is exposed to a number of environmental risks, each of which</p>	<p>Risk concerning use of herbicide. Potential</p>	<p>1. Coverage through liability and property insurance program.</p>

Appendix C – Analysis of Risks

Risk	Description	Workshop Commentary 2013	Treatment - 2013 report
	<p>could lead to a range of legal and financial consequences for TransGrid. This may include settlement of claims by an individual or group of individuals who have suffered health effects or financial losses, legal costs associated with negotiating that settlement, and the cost of remediation of any contaminated site.</p>	<p>breach with associated fines.</p> <p>Risk concerning SF6 release. Gas sinks and results in ground contamination. Costs include: gas replacement, fines and management of reputation.</p> <p>Previous incidents have been contained within TransGrid sites. Audits have been undertaken by independent inspector.</p>	<ol style="list-style-type: none"> 2. Below deductible and above limit losses accounted for within Self-insurance allowance. 3. Via nominated events for the cost pass through mechanism: <ol style="list-style-type: none"> 3.1. Insurance Cap Event; 3.2. Natural Disaster Event; 3.3. Terrorism Event; and 3.4. Environmental Contamination Event.
Bomb threat/hoax, terrorism	<p>TransGrid faces the risk that a malicious and deliberate act of sabotage by way of a bomb threat and or extortion attempt is undertaken by a third party. This would in turn impact on TransGrid’s ability to deliver electricity, and / or the costs associated with delivering electricity.</p>	<p>There have been no issues with threats to date.</p> <p>TransGrid has only been subject to minor theft. There are have been improvements in site security.</p>	<ol style="list-style-type: none"> 1. Coverage through liability and property insurance program. 2. Below deductible and Tower and line losses accounted for within Self-insurance allowance. 3. Via nominated events for the cost pass through mechanism: <ol style="list-style-type: none"> 3.1. Insurance Cap Event; and 3.2. Terrorism Event.
Earthquakes	<p>TransGrid’s electricity transmission assets are subject to risk arising from</p>	<p>Earthquake may represents a potential</p>	<ol style="list-style-type: none"> 1. Coverage through liability and property insurance program.

Appendix C – Analysis of Risks

Risk	Description	Workshop Commentary 2013	Treatment - 2013 report
	<p>earthquakes. Intense ground shaking, soil liquefaction, and surface faulting, can affect the structural and operational integrity of electricity assets.</p>	<p>threat both from a property and liability perspective. Liability issues may result from fallen lines, fires, etc.</p>	<ol style="list-style-type: none"> 2. Below deductible and T&L losses accounted for within Self-insurance allowance. 3. Via nominated events for the cost pass through mechanism: <ol style="list-style-type: none"> 3.1. Insurance Cap Event; and 3.2. Natural Disaster Event.
Insurers' credit	<p>Insurer credit risk is faced by TransGrid where there is a possibility that its insurers may default. This could lead to :</p> <ul style="list-style-type: none"> • The loss of the premium paid; and/or • Liability exposure, when an insurer is unable to honour an insurance policy. 	<p>Examples, such as the collapse of HIH, suggest this represents a credible risk for the prudent operator.</p>	<ol style="list-style-type: none"> 1. Major policies are taken out with multiple insurers; the largest share (2011/2012) was 50% on ISR and liability policies. 2. Scenario included within the Self-insurance allowance. 3. Via nominated events for the cost pass through mechanism: <ol style="list-style-type: none"> 3.1. Natural Disaster Event; 3.2. Terrorism Event; and 3.3. Insurer Default Event.
Counterparty credit	<p>TransGrid's revenue is received from distribution businesses, generators and large customers within the New South Wales Electricity market. Counterparty credit risk arises when there is some probability that one or more of these counterparties defaults on the payment of fees owed to TransGrid.</p>	<p>The majority of revenue received has been from government counterparties, whose risk of default has been considered negligible.</p>	<ol style="list-style-type: none"> 1. Scenario included within the Self-insurance allowance.
Bushfire	<p>TransGrid is exposed to two types of bushfire related risks:</p> <ul style="list-style-type: none"> • Exposure to liability for bushfires ignited by TransGrid assets that cause 	<p>Elements of TransGrid's asset management and operational strategies are specific to bush fire</p>	<ol style="list-style-type: none"> 1. Coverage through liability and property insurance program. 2. Below deductible and T&L losses accounted for within

Appendix C – Analysis of Risks

Risk	Description	Workshop Commentary 2013	Treatment - 2013 report
	<p>damage to TransGrid’s own assets and/or a third party property and life; and</p> <ul style="list-style-type: none"> • Bushfires caused by third parties (e.g. nature, deliberate lighting) that damage TransGrid’s assets. 	<p>risk management. These elements include policies, standards, processes and procedures.</p> <p>Past fire incidents are infrequent. Fire events to date of have resulted no in significant third party losses; however this does represent a risk for the business.</p>	<p>self-insurance allowance.</p> <p>3. Via nominated events for the cost pass through mechanism:</p> <p>3.1. Insurance Cap Event; and 3.2. Natural Disaster Event.</p>
Risk of Non Terrorist impact of planes and helicopters	<p>TransGrid may be legally liable for any losses or damages to aircraft and third parties in the event that an aviation accident or incident, not related to an act of terrorism, occurs as a result of an impact with TransGrid’s electricity assets.</p>	<p>There have been incidents with aircraft impacting lines.</p>	<p>1. Towers & Lines losses accounted for within self-insurance allowance.</p> <p>2. Via nominated events for the cost pass through mechanism:</p> <p>2.1. Natural Disaster Event; 2.2. Insurance Cap Event; 2.3. Environmental Contamination Event; and 2.4. Terrorism Event.</p>
Towers and lines	<p>There is an inherent risk that an exogenous incident could cause damage to TransGrid’s transmission network. Moreover, the financial impact of these incidents on TransGrid</p>	<p>No significant line expansion or change in exposure has been highlighted.</p>	<p>1. Towers & Lines losses accounted for within Self-insurance allowance.</p> <p>2. Via nominated events for the cost pass through mechanism:</p>

Appendix C – Analysis of Risks

Risk	Description	Workshop Commentary 2013	Treatment - 2013 report
	is likely to vary year-on-year, depending on the severity of the event.		2.1. Natural Disaster Event; 2.2. Terrorism Event.
Key assets (transformers and circuit breakers)	The risk of failure of power transformers and circuit breakers causing damage to TransGrid own assets and consequential liabilities to third party properties.	<p>There has been an increase of 14 substations since 2008.</p> <p>Use of gas insulated switch gear – reduced oil spill risk reduced.</p> <p>TransGrid comment regarding potential exposure to damage to underground cables due to ground movement.</p> <p>There has been expanded monitoring on strategic assets.</p>	1. Coverage through liability and property insurance program. 2. Below deductible losses accounted for within Self-insurance allowance. 3. Via nominated events for the cost pass through mechanism: 3.1. Insurance Cap Event; 3.2. Natural Disaster Event; 3.3. Terrorism Event; 3.4. Environmental Contamination Event; and 3.5. Cyber Event.
Contractual risks	Where the terms or conditions of a contract made between a third party and TransGrid exposes TransGrid to some residual risk (that is, TransGrid does not have mitigation mechanisms within the contract itself for a risk that would be reasonably expected to occur in relation to the provision of the service in question).	<p>Risk of being liable for damage to other parties' assets.</p> <p>Anticipate similar issues in the future, reflecting shift away from state ownership.</p>	1. Some cover may be provided through liability and property insurance program. 2. Below deductible losses accounted for within Self-insurance allowance. 3. Via nominated events for the cost pass through mechanism: 3.1. Insurance cap event;

Appendix C – Analysis of Risks

Risk	Description	Workshop Commentary 2013	Treatment - 2013 report
			3.2. Natural Disaster Event; 3.3. Terrorism Event; 3.4. Environmental Contamination Event; and 3.5. Cyber Event.
General public liability	<p>'General Public Liability' risk covers incidents where TransGrid is liable for injuries or other losses suffered by a member(s) of the general public as a result of its (or its employees') negligence or fault, sometimes as determined by the court of law. This excludes risks covered elsewhere in this report (eg: bushfire, earthquake, transformers).</p>	No significant change in liability exposure has been highlighted.	1. Coverage through liability insurance program. 2. Below deductible losses accounted for within Self-insurance allowance. 3. Via nominated events for the cost pass through mechanism: 3.1. Insurance Cap Event; 3.2. Natural Disaster Event; 3.3. Terrorism Event; and 3.4. Environmental Contamination Event; and 3.5. Cyber Event.
Failure to supply risk	<p>This represents the risk that TransGrid will be unable to provide electricity to the National Electricity Market (NEM), or that they will be unable to make their network available to generators.</p>	No significant change in liability exposure has been highlighted.	1. Coverage through liability insurance program. 2. Below deductible losses accounted for within Self-insurance allowance. 3. Via nominated events for the cost pass through mechanism: 3.1. Insurance Cap Event; 3.2. Natural Disaster Event; 3.3. Terrorism Event; and 3.4. Cyber Event.

Appendix C – Analysis of Risks

The following risks have been assessed and considered immaterial since the previous review, thus have been removed from the register in this review:

- Climate Change;
- Easements;
- Key Person.

APPENDIX D
SUMMARY OF INSURANCE COSTS

TransGrid
Projected Premiums 2014-2015

Policy Classes	Base Premium	Terrorism / Fee	Fire Services Levy	GST	Sub Total	Stamp Duty Rate	SD Amount	Total (incl GST)	Total Amount (excl GST)
Industrial Special Risks	\$3,288,155	\$147,494	\$1,150,943	\$458,659.19	\$5,045,251	9%	\$454,073	\$5,499,324	\$5,040,664
Combined General Liability	\$1,200,000	\$0	\$0	\$120,000	\$1,320,000	9%	\$118,800	\$1,438,800	\$1,318,800
NSW Workers' Compensation	\$1,099,641	\$0	\$0	\$109,964	\$1,209,605	0%	\$0	\$1,209,605	\$1,099,641
ACT Workers' Compensation	\$500	\$0	\$0	\$50	\$550	0%	\$0	\$550	\$500
Corporate Travel	\$15,000	\$0	\$0	\$1,500	\$16,500	9%	\$1,485	\$17,985	\$16,485
Crime	\$23,000	\$0	\$0	\$2,300	\$25,300	9%	\$2,277	\$27,577	\$25,277
Motor Vehicle	\$631,200	\$0	\$6,312	\$63,751	\$701,263	5%	\$35,063	\$736,326	\$672,575
Marine Transit	\$10,000	\$0	\$0	\$1,000	\$11,000	0%	\$0	\$11,000	\$10,000
D&O Insurance	\$190,000	\$0	\$0	\$19,000	\$209,000	9%	\$18,810	\$227,810	\$208,810
Employment Practices Liability	\$23,000	\$0	\$0	\$2,300	\$25,300	9%	\$2,277	\$27,577	\$25,277
Contract Works (PAI) - includes MD, Liability and Pollution	\$1,525,892	\$28,730	\$224,190	\$177,881	\$1,956,694	9%	\$176,102	\$2,132,796	\$1,954,915
Total	\$8,006,388	\$176,225	\$1,381,445	\$956,406	\$10,520,463		\$808,887	\$11,329,350	\$10,372,945

Notes/Subjectivities

- (1) All insurance classes are based on policy conditions, rates, parameters as outlined in this report.
- (2) * Premiums are best estimates and subject to change
 - * No provision for significant change in risk profile
 - * No provision for significant deterioration of claims experience
 - * No provision for significant claims affecting the market, eg. natural catastrophe events
- (3) GST is subject to final placement structure
- (4) Statutory Charges are based on the rate applied in 2013. This is subject to change based on asset location in future years

TransGrid
Projected Premiums 2015-2016

Policy Classes	Base Premium	Terrorism / Fee	Fire Services Levy	GST	Sub Total	Stamp Duty Rate	SD Amount	Total (incl GST)	Total Amount (excl GST)
Industrial Special Risks	\$3,664,955	\$164,396	\$1,282,833	\$511,218.36	\$5,623,402	9%	\$506,106	\$6,129,508	\$5,618,290
Combined General Liability	\$1,200,000	\$0	\$0	\$120,000	\$1,320,000	9%	\$118,800	\$1,438,800	\$1,318,800
NSW Workers' Compensation	\$1,127,132	\$0	\$0	\$112,713	\$1,239,845	0%	\$0	\$1,239,845	\$1,127,132
ACT Workers' Compensation	\$500	\$0	\$0	\$50	\$550	0%	\$0	\$550	\$500
Corporate Travel	\$15,281	\$0	\$0	\$1,528	\$16,809	9%	\$1,513	\$18,322	\$16,794
Crime	\$23,430	\$0	\$0	\$2,343	\$25,773	9%	\$2,320	\$28,093	\$25,750
Motor Vehicle	\$631,200	\$0	\$6,312	\$63,751	\$701,263	5%	\$35,063	\$736,326	\$672,575
Marine Transit	\$10,187	\$0	\$0	\$1,019	\$11,206	0%	\$0	\$11,206	\$10,187
D&O Insurance	\$193,553	\$0	\$0	\$19,355	\$212,908	9%	\$19,162	\$232,070	\$212,715
Employment Practices Liability	\$23,430	\$0	\$0	\$2,343	\$25,773	9%	\$2,320	\$28,093	\$25,750
Contract Works (PAI) - includes MD, Liabil	\$1,563,756	\$29,448	\$229,795	\$182,300	\$2,005,299	9%	\$180,477	\$2,185,776	\$2,003,476
Total	\$8,453,424	\$193,844	\$1,518,940	\$1,016,621	\$11,182,828		\$865,760	\$12,048,588	\$11,031,968

Notes/Subjectivities

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 - * No provision for significant claims affecting the market, eg. natural catastrophe events
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TransGrid
Projected Premiums 2016-2017

Policy Classes	Base Premium	Terrorism / Fee	Fire Services Levy	GST	Sub Total	Stamp Duty Rate	SD Amount	Total (incl GST)	Total Amount (excl GST)
Industrial Special Risks	\$4,128,661	\$185,196	\$1,445,142	\$575,899.91	\$6,334,899	9%	\$570,141	\$6,905,040	\$6,329,140
Combined General Liability	\$1,200,000	\$0	\$0	\$120,000	\$1,320,000	9%	\$118,800	\$1,438,800	\$1,318,800
NSW Workers' Compensation	\$1,155,310	\$0	\$0	\$115,531	\$1,270,841	0%	\$0	\$1,270,841	\$1,155,310
ACT Workers' Compensation	\$500	\$0	\$0	\$50	\$550	0%	\$0	\$550	\$500
Corporate Travel	\$15,281	\$0	\$0	\$1,528	\$16,809	9%	\$1,513	\$18,322	\$16,794
Crime	\$23,430	\$0	\$0	\$2,343	\$25,773	9%	\$2,320	\$28,093	\$25,750
Motor Vehicle	\$631,200	\$0	\$6,312	\$63,751	\$701,263	5%	\$35,063	\$736,326	\$672,575
Marine Transit	\$10,187	\$0	\$0	\$1,019	\$11,206	0%	\$0	\$11,206	\$10,187
D&O Insurance	\$193,553	\$0	\$0	\$19,355	\$212,908	9%	\$19,162	\$232,070	\$212,715
Employment Practices Liability	\$23,430	\$0	\$0	\$2,343	\$25,773	9%	\$2,320	\$28,093	\$25,750
Contract Works (PAI) - includes MD, Liabil	\$1,601,703	\$30,185	\$235,540	\$186,743	\$2,054,171	9%	\$184,875	\$2,239,046	\$2,052,303
Total	\$8,983,255	\$215,381	\$1,686,994	\$1,088,563	\$11,974,193		\$934,193	\$12,908,386	\$11,819,823

Notes/Subjectivities

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 - * No provision for significant deterioration of claims experience
 - * No provision for significant claims affecting the market, eg. natural catastrophe events
- (3) GST is subject to final placement structure
- (4) Statutory Charges are based on the rate applied in 2013. This is subject to change based on asset location in future years

TransGrid
Projected Premiums 2017-2018

Policy Classes	Base Premium	Terrorism / Fee	Fire Services Levy	GST	Sub Total	Stamp Duty Rate	SD Amount	Total (incl GST)	Total Amount (excl GST)
Industrial Special Risks	\$4,565,578	\$204,795	\$1,598,075	\$636,844.80	\$7,005,293	9%	\$630,476	\$7,635,769	\$6,998,924
Combined General Liability	\$1,242,000	\$0	\$0	\$124,200	\$1,366,200	9%	\$122,958	\$1,489,158	\$1,364,958
NSW Workers' Compensation	\$1,183,489	\$0	\$0	\$118,349	\$1,301,838	0%	\$0	\$1,301,838	\$1,183,489
ACT Workers' Compensation	\$500	\$0	\$0	\$50	\$550	0%	\$0	\$550	\$500
Corporate Travel	\$15,281	\$0	\$0	\$1,528	\$16,809	9%	\$1,513	\$18,322	\$16,794
Crime	\$23,430	\$0	\$0	\$2,343	\$25,773	9%	\$2,320	\$28,093	\$25,750
Motor Vehicle	\$631,200	\$0	\$6,312	\$63,751	\$701,263	5%	\$35,063	\$736,326	\$672,575
Marine Transit	\$10,187	\$0	\$0	\$1,019	\$11,206	0%	\$0	\$11,206	\$10,187
D&O Insurance	\$193,553	\$0	\$0	\$19,355	\$212,908	9%	\$19,162	\$232,070	\$212,715
Employment Practices Liability	\$23,430	\$0	\$0	\$2,343	\$25,773	9%	\$2,320	\$28,093	\$25,750
Contract Works (PAI) - includes MD, Liability and Pollution	\$1,640,600	\$30,939	\$241,428	\$191,297	\$2,104,264	9%	\$189,384	\$2,293,648	\$2,102,352
Total	\$9,529,248	\$235,734	\$1,845,815	\$1,161,080	\$12,771,877		\$1,003,195	\$13,775,072	\$12,613,993

Notes/Subjectivities

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 - * No provision for significant deterioration of claims experience
 - * No provision for significant claims affecting the market, eg. natural catastrophe events
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- (4) Statutory Charges are based on the rate applied in 2013. This is subject to change based on asset location in future years

TransGrid
Projected Premiums 2018-2019

Policy Classes	Base Premium	Terrorism / Fee	Fire Services Levy	GST	Sub Total	Stamp Duty Rate	SD Amount	Total (incl GST)	Total Amount (excl GST)
Industrial Special Risks	\$4,896,301	\$219,630	\$1,713,837	\$682,976.79	\$7,512,745	9%	\$676,147	\$8,188,892	\$7,505,915
Combined General Liability	\$1,273,050	\$0	\$0	\$127,305	\$1,400,355	9%	\$126,032	\$1,526,387	\$1,399,082
NSW Workers' Compensation	\$1,213,076	\$0	\$0	\$121,308	\$1,334,384	0%	\$0	\$1,334,384	\$1,213,076
ACT Workers' Compensation	\$500	\$0	\$0	\$50	\$550	0%	\$0	\$550	\$500
Corporate Travel	\$15,281	\$0	\$0	\$1,528	\$16,809	9%	\$1,513	\$18,322	\$16,794
Crime	\$23,430	\$0	\$0	\$2,343	\$25,773	9%	\$2,320	\$28,093	\$25,750
Motor Vehicle	\$631,200	\$0	\$6,312	\$63,751	\$701,263	5%	\$35,063	\$736,326	\$672,575
Marine Transit	\$10,187	\$0	\$0	\$1,019	\$11,206	0%	\$0	\$11,206	\$10,187
D&O Insurance	\$193,553	\$0	\$0	\$19,355	\$212,908	9%	\$19,162	\$232,070	\$212,715
Employment Practices Liability	\$23,430	\$0	\$0	\$2,343	\$25,773	9%	\$2,320	\$28,093	\$25,750
Contract Works (PAI) - includes MD, Liabil	\$1,680,469	\$31,713	\$247,464	\$195,965	\$2,155,610	9%	\$194,005	\$2,349,615	\$2,153,651
Total	\$9,960,477	\$251,343	\$1,967,613	\$1,217,943	\$13,397,376		\$1,056,561	\$14,453,937	\$13,235,994

Notes/Subjectivities

- (1) All insurance classes are based on policy conditions, rates, parameters as outlined in this report.
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 - * No provision for significant deterioration of claims experience
 - * No provision for significant claims affecting the market, eg. natural catastrophe events
- (3) GST is subject to final placement structure
- (4) Statutory Charges are based on the rate applied in 2013. This is subject to change based on asset location in future years