

Marsh: Quantification of Self-Insurance costs - Public

Appendix 15



Tasmanian Networks Pty Ltd



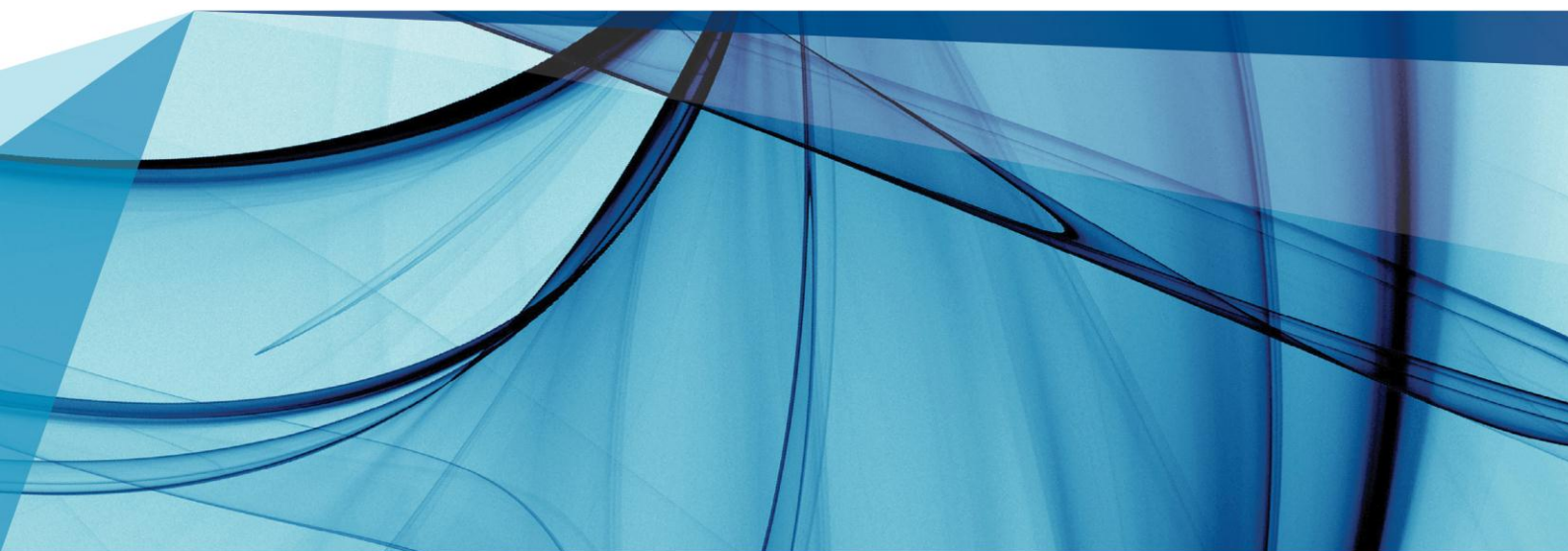
Transend Networks Pty Ltd

29 April 2014

TRANSEND NETWORKS PTY LTD

QUANTIFICATION OF SELF-INSURANCE COSTS

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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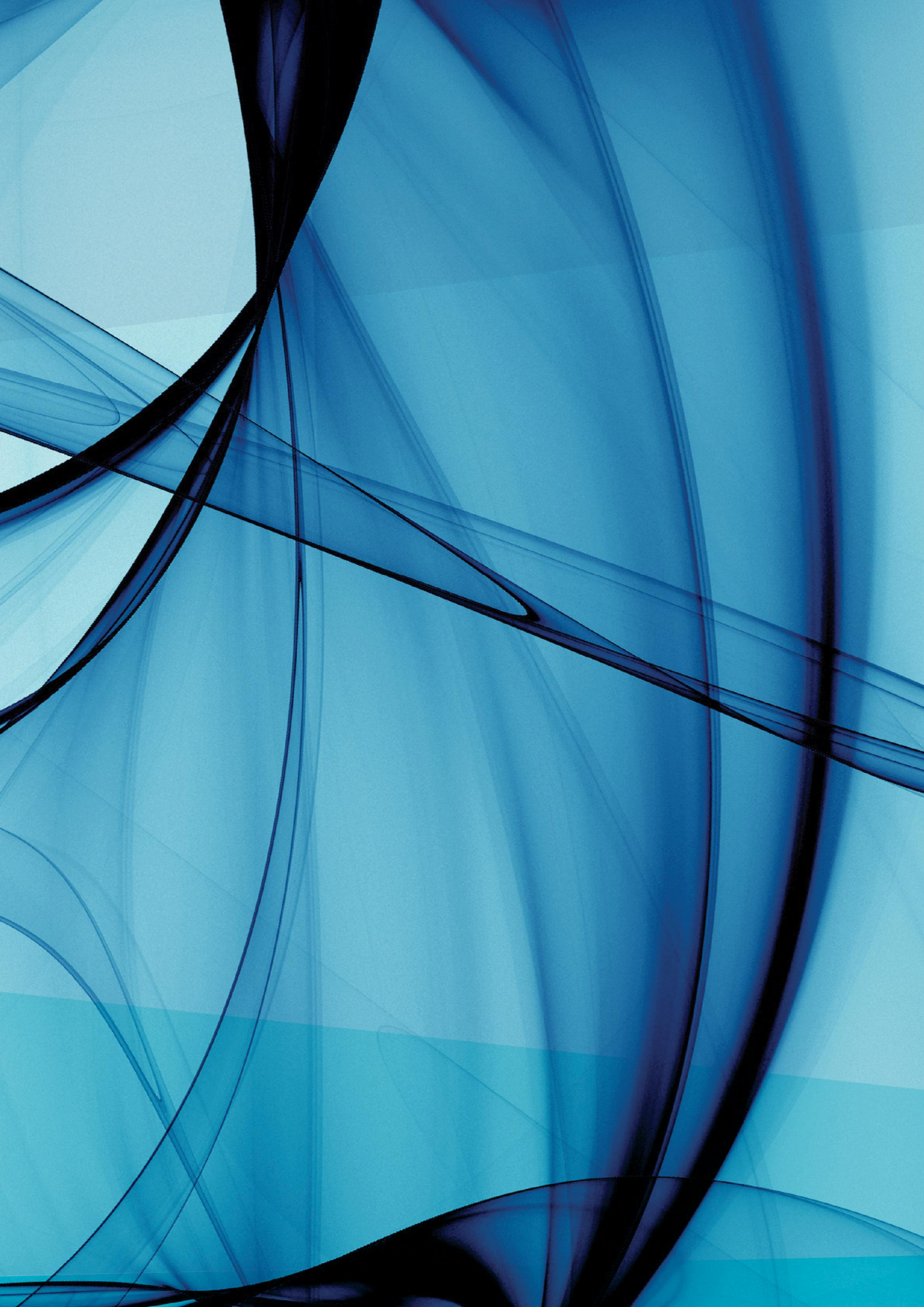
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SECTION ONE

EXECUTIVE SUMMARY

Background

Marsh Australia (**Marsh**) has been engaged by Transend Networks Pty Ltd (**Transend**) to provide a quantification of self-insurance costs in relation to its prescribed services in electricity transmission. This is intended to form part of Transend's revenue proposal to the Australian Electricity Regulator (**AER**) for the regulatory period effective from 1 July 2014 to 30 June 2019.

Approach

This is the second time we have provided such advice to Transend. The previous report was compiled in May 2008 for the previous regulatory period ending 30 June 2014.

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 Transend's commercial insurance policies, (**below-deductible losses**);
- greater than the insurance limit, for losses relating to events covered by Transend's commercial insurance policies, (**above-limit losses**); and
- of losses relating to uninsured events (**uninsured losses**).

We are aware that the data provided by Transend has already explicitly excluded any maintenance related costs and network events [REDACTED] within the events described above; as these costs have been included in another part of the Operational Expenditure (**OPEX**) allowance within Transend's revenue proposal.

We have focused on risks that are specific to Transend's prescribed services as a Transmission Networks Services 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:

- Transmission Lines – Material Damage and Business Interruption;
- Substations – Material Damage and Business Interruption;
- Public and General Liability; and
- Others (Travel, motor fleet etc).

With respect to assuming the self-insurance allowance for each of the above, we have relied on a combination of Transend's historical losses (**working losses**) as well as potential losses that have not occurred for Transend but are deemed credible (**scenario losses**).

- For the working losses, we were able to use Transend'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.

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

The schematic below summarises how each risk grouping has been incorporated and treated within our approach.

	Controllable Opex Allowance	Commercial Insurance	Self-Insurance	Cost Pass-through
Transmission Lines - losses below \$20k	Y	N	N	N
Transmission Lines - losses between \$20k and \$2m	N	N	Y	N
Transmission Lines - losses above \$2m	N	N	N	Y
Substations - losses below \$20k	Y	N	N	N
Substations - losses between \$20k and deductible	N	N	Y	N
Substations - insured losses, within Limit of Liability	N	Y	N	N
Substations - above Limit of Liability	N	N	N	Y
Combined Liability - below deductible	N	N	Y	N
Combined Liability - insured losses, within Limit of Liability	N	Y	N	N
Combined Liability - above Limit of Liability	N	N	N	Y
Others - below deductible	N	N	Y	N
Others - insured losses, within Limit of Liability	N	Y	N	N
Others - above Limit of Liability	N	N	N	Y

The approaches we have used in calculating the expected level of self-insurance costs in this report are based on actuarial techniques and can be broadly considered as actuarial advice.

Results - overall

In total, we recommend Transend adopts \$697k as an annual cost of self-insurance allowance for each of the forecast years in the upcoming regulatory period. Table below provides a breakdown by four risk groupings. We have selected these groupings with consideration to the types of Transend's assets, risk exposure and their insured status.

Table 1: Total self-insurance allowance, June 2014 values

Financial Year	Self-insurance allowance (\$)				Total
	Transmission Lines	Substation	Liability	Others	
2014					697,395
2015					697,395
2016					697,395
2017					697,395
2018					697,395

Our recommended self-insurance allowance is a representation of the average annual cost of both below-deductible and uninsured losses that have occurred historically during the past 10 to 15 years, plus the below-deductible and uninsured costs of various scenario events (between one-in-25 to one-in-100 year likelihoods) that have not occurred. We are of the view that as any events beyond these probability levels are most likely to be extreme in nature, any attempt to quantify an allowance on an annual basis would lead to a significant amount of

uncertainty and result in an inefficient cost recovery to the customers. They are most appropriately dealt with through the cost-pass through mechanism, as discussed in detail below and in Section Eight of this report.

We must also note our estimated self-insurance allowance is the expected annual cost of funding future losses, inflated to 30 June 2014 values, 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 the cost of any commercial insurances, as insurers would most likely be pricing for the expected cost of losses, as well as expenses and profit margin.

Cost-pass through mechanism

Additionally, we have recommended and defined three events appropriate for the cost-pass through mechanism. These nominated events are:

- Natural Disaster Event
- Insurance Cap Event; and
- Terrorism Event.

We note the above events could arise either from First Party damage to Transend's assets or Third Party damage, loss of life caused by Transend's assets, or a combination of both. Also the total cost of such an event to Transend, net of external insurance proceeds must first exceed the materiality threshold, being 1% of Transend's maximum allowed revenue for the forecast year.

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 Transend's efficient costs are passed onto customers. We have thus excluded these events from the estimated self-insurance allowance.

Refer to rest of the report

The following sections of this report provide detailed information on the approach, assumptions, results, data and limitations.

SECTION TWO

BACKGROUND

Transend owns, manages and operates the electricity transmission network in Tasmania. It is licensed by the independent Tasmanian Economic Regulator and transmits electricity from power stations to its substations around the state. The transmission system comprises of over 3500 circuit kilometres of transmission lines, 49 substations, 7 switching stations and 2 transition stations. Transend's network includes assets that operate at the usual transmission voltages of 110kV and 220kV as well as 6.6kV, 11kV, 22kV, 33kV and 44kV.

Marsh has been engaged by Transend to provide a quantification of self-insurance costs in relation to its prescribed services in electricity transmission. This is intended to form part of Transend's revenue proposal to the AER for the regulatory period effective from 1 July 2014 to 30 June 2019.

This is the second time we have provided such advice to Transend. The previous report was compiled in May 2008 for the previous regulatory period ending 30 June 2014.

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 is unchanged from the expiring 2013/14 structure – 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.

Distribution and Use

No other use of, or reference to, our report should be made without prior written consent from Marsh, nor should the whole or part of this report be disclosed to any other person, other than persons for whom it is or has been intended.

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 this report or purported reliance on the Report including any errors in, or omissions from, the utilised models.

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

Transend / Aurora Energy merger

Given the upcoming merger between Transend and Aurora Energy's network business effective 1 July 2014, the two entities will be combining their insurance policies. We understand this will have minimal or no impact on Transend's self-insurance costs given in this report, as the Transend assets and risks have essentially been treated as separate or 'ring fenced' from those of Aurora's for the purpose of estimating the self-insurance costs for the forecast periods.

SECTION THREE

APPROACH

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 Transend's commercial insurance policies, (**below-deductible losses**);
- greater than the insurance limit, for losses relating to events covered by Transend's commercial insurance policies, (**above-limit losses**); and
- of losses relating to uninsured events (**uninsured losses**).

We are aware that the data provided by Transend has already explicitly excluded any maintenance related costs within the events described above; as these costs have been included in another part of the Operational Expenditure (OPEX) allowance within Transend's revenue proposal. It also excludes any costs which form part of Transend's Capital Expenditure forecasts.

We must note our estimated self-insurance allowance is the expected annual cost of funding future losses, inflated to 30 June 2014 values, 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 the expected cost of losses, as well as expenses and profit margin.

We have focused on risks that are specific to Transend's prescribed services as a 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:

- Transmission Lines – Material Damage and Business Interruption;
- Substations – Material Damage and Business Interruption;
- Public and General Liability; and
- Others (Travel, motor fleet etc).

With respect to assessing the self-insurance allowance for each of the above, we have relied on a combination of Transend's historical losses (**working losses**) as well as potential losses that have not occurred for Transend but are deemed credible (**scenario losses**).

- For the working losses, we were able to use Transend'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.
- For the scenario losses, we have relied on an assessment of Transend's current risk profile, and deriving potential but credible scenarios resulting in losses that are not represented in Transend's historical experience.

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, whilst 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 Eight discusses and defines the events under the cost pass through mechanism. The schematic below summarises how each risk grouping has been incorporated and treated within our approach.

	Controllable Opex Allowance	Commercial Insurance	Self-Insurance	Cost Pass-through
Transmission Lines - losses below \$20k	Y	N	N	N
Transmission Lines - losses between \$20k and \$2m	N	N	Y	N
Transmission Lines - losses above \$2m	N	N	N	Y
Substations - losses below \$20k	Y	N	N	N
Substations - losses between \$20k and deductible	N	N	Y	N
Substations - insured losses, within Limit of Liability	N	Y	N	N
Substations - above Limit of Liability	N	N	N	Y
Combined Liability - below deductible	N	N	Y	N
Combined Liability - insured losses, within Limit of Liability	N	Y	N	N
Combined Liability - above Limit of Liability	N	N	N	Y
Others - below deductible	N	N	Y	N
Others - insured losses, within Limit of Liability	N	Y	N	N
Others - above Limit of Liability	N	N	N	Y

SECTION FOUR

TRANSMISSION LINES

Overview

Transend's transmission line network includes about 7,852 structures comprising mainly steel towers, located on about 12,034 hectares of easements. Over 7,500 of these structures are made up of galvanised or weather resistant lattice support. There are over 2,500 kilometres or 3577 circuit kilometres of transmission lines, mostly in 220kV and 110kV.

Risk Assessment

We have been provided by Transend a database of losses since 1994. To our understanding, these correspond to events that have resulted in loss to transmission lines assets, exclusive of the events that are considered as maintenance related and "business-as-usual" in nature.

The historical loss database comprises largely of attritional losses arising from:

- Subsidence or sinkholes;
- Malicious damage;
- Damage by inanimate objects and animals;
- Bushfire;
- Conductor breakdown;
- Insulator breakdown;
- Wind;

In regards to the damage caused by bushfires, we believe Transend's resilient approach to management of bushfire management have materially reduced the probability and severity of potential losses to transmission lines assets due to bushfires. Apart from the fact that transmission lines have cleared easements, typically 50-60 metres wide, regular helicopter and ground controls are conducted to inspect tree clearances. From October to November, all transmission lines are inspected by helicopters and ground inspections.

Insurance arrangement

Currently Transend does not insure its transmission lines assets. This is consistent with our understanding of the approach taken by other Australian and New Zealand Transmission Network Service Providers (**TNSPs**) – with the exception of Powerlink Queensland. This is in large due to the fact that insurance for these assets is either unavailable in most markets or available on terms that are restrictive and not commercially viable.

Cost pass through mechanism

We are of the opinion that any event that would potentially result in Transend recovering its cost through the cost pass through mechanism would need to impact a large area – this is likely to be covered under the Natural Disaster event, as defined in Section Eight of this report.

Self-insurance allowance

We believe the loss history for the transmission lines assets is a reasonable basis in forming a representation of the attritional working losses to be expected in the future five years during the next regulatory period.

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Thus in deriving the self-insurance allowance for property damage related to transmission lines assets, we have taken the following approach:

- 1. Inflate 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 the inflated historical losses.
- 4. Multiply the forecast severity and frequency to derive the expected annual ground-up cost due to attritional working losses.
- 5. Apply actuarial judgement and assign probability to scenario losses up to in severity (just below the approximate materiality threshold for the cost-pass through mechanism).
- 6. Multiply the assigned probability and the severity to derive the expected annual ground-up cost due to scenario losses.
- 7. Given the lack of commercial insurance on the transmission lines assets, the annual ground-up cost would, by default make up all of the self-insurance allowance.

We estimate an annual allowance of in self-insurance costs relating to transmission lines assets, as given in the table below.

Table 2: Transmission Lines self-insurance allowance, June 2014 values

Financial Year	Self-insurance allowance (\$)		
	Working losses	Scenario losses	Total
.....			

.....
.....

SECTION FIVE

SUBSTATIONS

Overview

Transend owns and operates a total of 49 substations, 7 switching stations, 2 transition stations, with a concentration of asset values in a number of substations, namely:

- George Town Substation;
- Chapel Street Substation;
- Hadspen Substation;
- Trevallyn Substation;
- Sheffield Substation;
- Burnie Substation;
- Liapootah Switching Station;
- Palmerston Substation; and
- Farrell Substation.

Risk Assessment

We have been provided by Transend a database of losses since 1999. To our understanding, these correspond to events that have resulted in property damage of substation assets, exclusive of the events that are considered as maintenance related and “business-as-usual” in nature. These losses are comprised of events arising from:

- Building fire;
- Break & enter, including theft;
- Transformer failure;
- Circuit failure;
- Storm / Flooding;
- Damage due to inanimate object or animal; and
- Loss of supply due to substation outage;

In additional, a number of natural peril as well as man-made risks can potentially subject Transend’s substation-related assets to significant material damage and business interruption costs. These have been summarised as follows:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Thus in deriving the self-insurance allowance for property damage related to substation assets, we have taken the following approach:

1. Inflate historical losses to current values.
2. Derive a normalised level of forecast frequency, based on historical occurrences.
3. Derive a normalised level of forecast severity, based on the inflated historical losses.
4. Multiply the forecast severity and frequency to derive the expected annual ground-up cost due to attritional working losses.
5. Apply actuarial judgement and attach probability assumptions to the scenarios.
6. Multiply these assigned probabilities and the severity to derive the expected annual ground-up cost due to scenario losses.
7. Total expected annual ground-up cost is the summation of steps 4 and 6 above.
8. Apply appropriate Inflation factors for each future year of the regulatory period.
9. Overlay the ground-up cost with Transend's ISR insurance programme to derive the self-insured portion of future losses.

We estimate an annual allowance of in self-insurance costs relating to substation assets, as given in the table below.

Table 3: Substation self-insurance allowance, June 2014 values

Financial Year	Self-insurance allowance (\$)		
	Working losses	Scenario losses	Total

SECTION SIX

PUBLIC & GENERAL LIABILITY

Overview

Transend owns, manages and operates transmission-related assets across Tasmania in its capacity as a Transmission Networks Service Provider. These are well described in the previous two sections of this report. Aurora Energy is the sole Distribution Network Service Provider in Tasmania and Transend's largest customer. Connection agreements are in place with Aurora Energy and Hydro Tasmania (generation) that states Transend's third party liability to either party.

In addition, Transend supplies large load high voltages directly to major industrial companies, where Transend's third party liability to these parties is set out in the individual connection agreements.

Risk assessment

The nature of its operations and assets exposes the organisation to a number of third party risks, including third party property damage, business interruption and poor supply quality such as excess voltage, under frequency or due to equipment failure.

[REDACTED]

In terms of risks that could potentially result in significant cost to Transend, we have considered the following:

■ [REDACTED]

■ [REDACTED]

■ [REDACTED]

■ [REDACTED]

■ [REDACTED]

Insurance Arrangement

[REDACTED]

Cost pass through mechanism

[REDACTED]

[REDACTED]

Hence an event arising from public and general liability eligible for the cost-pass through mechanism is likely to be covered under the Insurance Cap event - defined in Section Eight of this report.

Self-insurance allowance

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

Description of the approach is given below:

1. Apply actuarial judgement and where possible, attach probability assumptions to the [REDACTED] scenarios.
2. For the scenarios that are considered unforeseen, extremely remote and thus unquantifiable, we consider these within the events defined for cost-pass through mechanism.

3. For the scenarios included for self-insurance, multiply the assigned probabilities and the [REDACTED] severity to derive the expected annual ground-up cost.
4. Apply appropriate inflation factors on forecast losses to June 2014.
5. Overlay the ground-up cost with Transend's liability insurance programme to derive the self-insured portion of future losses.

We estimate an annual allowance of [REDACTED] in self-insurance costs relating to Public & General liability losses, as given in the table below.

Table 4: Public & General liability self-insurance allowance, June 2014 values

Financial Year	Self-insurance allowance (\$)		
	Working losses	Scenario losses	Total
[REDACTED]			

[REDACTED]
[REDACTED]

SECTION SEVEN OTHERS

Overview

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

- Motor Vehicle
- Business Practices Liability (BPL) (or Corporate Practices Protection)
- Directors' and Officers' (D&O)
- Employment Practices Liability (EPL)
- Travel
- Telecommunications Liability (or Information Technology Liability)
- Group Personal Accident (Group PA)
- Crime

We have excluded losses relating to Workers Compensation as we have been informed these have been incorporated within labour on-costs, which is another part of Transend's revenue proposal.

Risk Assessment

We have been provided by Transend a database of both self-insurance and insurance losses over the past five years. [REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]

Insurance arrangement

Individual insurance policies are in place for each of the risks above, with various deductibles and limits.

Cost pass through mechanism

We are of the opinion that the risks covered in this section are well managed, with appropriate insurances in place. Thus any eligible events for cost-pass through mechanism will be likely to exceed the insurance limits and be extremely remote in nature - covered under the Insurance Cap event, as defined in Section Eight.

Self-insurance allowance

[REDACTED]

Thus in deriving the self-insurance allowance for other risks, we have taken the following approach:

- 1. Inflate 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 the inflated historical losses.
- 4. Multiply the forecast severity and frequency to derive the expected annual ground-up cost.
- 5. Overlay the ground-up cost with Transend’s relevant insurance programme to derive the self-insured portion of future losses for each of the regulatory years.

We estimate an annual allowance of █ in self-insurance costs relating to other losses, as given in the table below:

Table 5: Others self-insurance allowance, June 2014 values

	Self-insurance allowance (\$)		
Financial Year	Working losses	Scenario losses	Total

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SECTION EIGHT

COST PASS THROUGH

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 Transend, hence could be regarded as an unforeseen event; and
- Such an event is beyond the control of Transend, or Transend 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 Transend with a reasonable opportunity to recover efficient costs associated with events that are outside of their reasonable control.

Given the above, we have recommended three events appropriate for the cost-pass through mechanism. We also note a materiality threshold applies before Transend could consider recovering its costs from the cost pass through mechanism. [REDACTED]

[REDACTED] These events are defined in the following paragraphs:

Natural disaster

Any major fire, flood, earthquake or other natural disaster beyond the reasonable control of Transend that occurs during the 2014–19 regulatory control period and materially increases the costs to Transend of providing prescribed transmission services.

The term ‘major’ in the above paragraph means an event that is serious and significant. It does not mean material as that term is defined in the Rules (that is, one per cent of the TNSP’s maximum allowed revenue in that year).

Insurance cap event

Whereby:

1. Transend makes a claim or claims and receives the benefit of a payment or payments under a relevant insurance policy;
2. Transend incurs costs beyond the relevant policy limit, and
3. The costs beyond the relevant policy limit materially increase the costs to Transend of providing prescribed transmission services.

For this insurance cap event:

4. The relevant policy limit is the greater of:
 - a. Transend's actual policy limit at the time of the event that gives rise to the claim, and
 - b. the policy limit that is explicitly or implicitly commensurate with the allowance for insurance premiums that is included in the forecast operating expenditure allowance approved in the AER's final decision for the regulatory control period in which the insurance policy is issued.
5. A relevant insurance policy is an insurance policy held during the regulatory control period or a previous regulatory control period in which Transend was regulated.

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), which from its nature or context is done for, or in connection with, political, religious, ideological, 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 Transend of providing prescribed transmission services. We note the costs to Transend considered in this event should, in theory be net of any recoveries from either:

1. Any insurance policies in place at the time of loss
2. Australian Reinsurance Pool Corporation (ARPC) under the Terrorism Insurance Act 2003.

APPENDIX ONE

DATA

For the purpose of our analysis, we have been provided with the following documents either from or on behalf of Transend that we have relied on as basis for deriving our estimates. The information provided by or on behalf of Transend includes:

- Historical self-insurance losses database;
- Historical insurance losses database;
- Insurance programme summary for policy years 08/09 to 13/14;
- Operational risk register;
- Corporate plan 2013;
- Replacement costs for lines, towers and substations by location;
- Property underwriting information report by Marsh, June 2013;
- Public & General Liability underwriting information report by Marsh, June 2013;
- Bush fire risk management memo addressed to the Board of Directors, April 2013; and
- Aurora Energy and Transend Networks Bushfire Liability Study by Marsh, July 2013.

In addition, we have also gathered qualitative information as part of a workshop early July 2013 conducted by Marsh personnel from representatives of the key business areas of Transend.

APPENDIX TWO

DETAILED WORKINGS

The tables in the following pages are detailed workings in arriving at our self-insurance allowance – these include:

Table 1: Transmission lines – attritional working losses

Table 2: Substations – attritional working losses

Table 3: Transmission lines – scenario losses

Table 4: Substations – scenario losses

Table 5: Liability – scenario losses

Table 6: Travel – attritional working losses

Table 7: Motor – attritional working losses

Appendix Table 1: Transmission lines historical loss data

Year of loss	Accident description	Cost (\$)

Appendix Table 2: Substation historical loss data

Year of loss	Accident description	Cost (\$)

Appendix Table 2: Transmission lines - scenario losses						
Scenarios	Description	Probability	Severity (\$)	Under deductible / Retained (\$)	Transferred (\$)	Self-insurance allowance, Indexed to June 2014 (\$)

Appendix Table 4: Substations - scenarios losses						
Scenarios	Description	Probability	Severity (\$)	Under deductible / Retained (\$)	Transferred (\$)	Self-insurance allowance, Indexed to June 2014 (\$)

Appendix Table 5: Liability - scenario losses						
Scenarios	Description	Return period	Severity (\$)	Under deductible / Retained (\$)	Transferred (\$)	Self-insurance allowance, Indexed to June 2014 (\$)

Appendix Table 6: Travel - working losses

Year	# of losses	Under deductible/ Retained (\$)	Gross incurred loss (\$)	Under deductible / Retained (inflated to June 2014) (\$)

Appendix Table 7: Motor - working losses

Year	# of losses	Under deductible/ Retained (\$)	Gross incurred loss (\$)	Under deductible / Retained (inflated to June 2014) (\$)