Commerce Commission

Orion CPP Proposal - Insurance Review

Aon Expert Opinion

May 2013

Pix Source: xxx

Commerce Commission
New Zealand

Orion CPP Proposal
Insurance Review

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Introduction

This report provides Aon's expert opinion on the terms of reference provided by the Commerce Commission with respect to the Marsh report, dated 8 October 2012, on insurance aspects of Orion's CCP proposal.

In developing this response, we have:

- Utilised our knowledge within New Zealand and internationally of risk and insurance issues that could impact on the availability and cost of insurance for Orion's electricity distribution network assets.
- Reviewed a number of publications including:
  - Orion's Annual Reports 2010 to 2012 inclusive;
  - Orion's 10 year Asset Management Plans, published from 2006 to 2013;
  - Orion's proposed electricity network reliability and pricing proposals;
  - The independent report commissioned by the Ministry of Civil Defence Emergency Management titled "Review of the Civil Defence Emergency response to the 22 February Christchurch Earthquake";
  - Various papers from the Canterbury Engineering Lifelines Group.

Our review is based on this information and that supplied by the Commerce Commission terms of reference, most importantly the Orion insurance opex summary paper. We note that additional information on Orion's insurance programme and the earthquake losses sustained by Orion to its network and any loss estimates available of potential future damage to the major network components (overhead lines, underground cables, switchgear/transformers) is required for a more detailed response to be provided.

The findings contained in this report can be briefly summarised as:

- The Marsh report generically addresses the insurance market perception of Transmission and Distribution (T&D) risks and the general unwillingness of underwriters to provide cost-effective coverage for these assets. The report does not specifically address Orion's assets, strong risk management processes, loss history or the potential for further catastrophic losses from a range of events.
- Aon is confident that insurance for Material Damage to most network assets is available for a range of catastrophe perils. Utilising Orion's best practice risk management approach to analysing risks to the T&D asset components (lines, cables and substations) will, with professional risk and insurance advisory support, determine the best cost and insurance coverage available to finance these risks.
- Insurance for Business Interruption loss as a result of Material Damage can be challenging for some T&D assets – lines and cables – but is readily available for substations.
- Aon recommends that the risk management standard ISO31000:2009 is utilised to assess the risks to the various T&D assets, their potential severity and frequency and then insurance markets approached for specifically tailored coverage to determine the efficiency of insuring in the future. Initial thoughts on insurance coverage availability, subject to determining suitable limits and policy deductibles, are:
  - Substations
    - "Full coverage" including Business Interruption should be available;

- Distribution Lines
    - If Orion is willing to continue to retain windstorm risk (or consider alternative risk financing, such as a captive, for this peril), then Aon is confident Material Damage insurance will be available;
- Cables
    - Material Damage insurance will be available for major cables.

- Alternative risk financing options such as a captive insurance company could also prove viable for Orion to assist in T&D coverage. A feasibility study will be required but with reinsurance protection being available for a range of risks to these assets, the merits should be explored.
- Orion has consistently adopted best practice risk management processes to analyse risks to all assets and to develop and implement mitigation strategies for potential catastrophic events. This is amply demonstrated through the 10 year rolling Asset Management Plans and the effectiveness of their post-earthquake recovery.
- The insurance market imposed punitive terms on all insurance buyers immediately after the Canterbury earthquakes. However, since the latter half of 2012, Aon has observed increased insurance capital being made available and growing willingness by insurers to provide improved terms and premiums to organisations that can demonstrate mature risk management practices. Aon is confident that given a strategic approach to insurance analysis and insurer negotiation, that Orion will benefit from improved insurance terms and premiums in 2013, and beyond, for their current insurance requirements.

For purposes of clarity, our report follows the order of the six items listed in the Commerce Commission terms of reference. We have not commented specifically on Orion's proposed pricing analysis as this is not part of the terms of reference.

We look forward to discussing this report with the Commission.

Russell Bell
Executive Director

Jeroen Schomaker
Executive Director

1. Peer Review

Peer review of the analysis and conclusions in the Marsh report in Appendix II of the Orion CPP proposal.

From a high level perspective, the Marsh report is generic in its analysis of the insurance market for electricity distribution business (EDBs) and their transmission and distribution (T&D) assets.

The Marsh report does not analyse Orion's loss experience to the various T&D asset types nor does it address Orion's extremely well developed risk management strategies and processes.

Aon agrees with the general commentary in the Marsh report that as a rule T&D insurance coverage is difficult to obtain and expensive, however, we do not necessarily agree with the findings of the report as they relate to Orion's specific circumstances.

The following report section provides our response to the key points in each of the Marsh report sections; they are tabulated in the order included in the Marsh report for ease of reference. Later report sections address the additional topics required by the Commerce Commission terms of reference.

Marsh Commentary	Aon Response
Marsh Report Section 2: The Insurance Market	
"EDB's key substations are normally insured under an MD insurance policy".	Agree. The coverage would also normally extend to Business Interruption loss as a result of insurable damage to these assets.
"… no EDB's or transmission companies in Australasia… insure their T&D risks". The exception being Powerlink in Queensland.	This reconciles with Aon's understanding, however this conclusion would require more intensive benchmarking.
"Insurance companies are not typically able to provide MD and BI insurance cover for T&D… due to reinsurance treaty arrangements… a global position due to… natural disasters and catastrophes".	Aon agree that T&D risks are generally a reinsurance treaty exclusion. This is driven principally by windstorm experience (particularly Gulf of Mexico hurricanes. We do note that if windstorm can be removed from cover, insurance can be more readily available - refer to report section 2.
"Currently all of these risks (those noted in the Marsh report) for Orion are uninsurable as T&D insurance is not available for risks in Christchurch. If insurance was available it would exclude cover for terrorism, damage from wilful neglect and failure from internal causes".	Aon does not agree that T&D coverage is not available for Christchurch. Coverage is available subject to appropriate limits, deductibles and identification of perils to be insured - refer to section 2. Exclusions for terrorism, wilful neglect and failure from internal causes are common for all insurance policies. However specific coverage for terrorism and internal failure (machinery breakdown) can be purchased.
"Insurers believe that insurable risk can be aggregated in limited geographic areas… this can concentrate risk… to cause a significant single event exposure".	Risk aggregation due to the potential for catastrophic loss whether by natural disaster (earthquake, flood, storm, etc.) or for a major fire, is precisely why insurance is required and is one of the major reasons for the development of the insurance industry. Insurers manage their concentration risk through reinsurance. Aon does not believe this Marsh commentary is relevant.

Marsh Commentary	Aon Response
Marsh Report Section 3: The Availability of MD and BI Insurance	
History of TRIP and Orion's participation explained on page 4 and page 5.	Aon has limited information to advise on the accuracy of this commentary but believes it to be substantially correct, with the exception that the amalgamation of EDBs referred to in paragraph 7 on page 5 requires further expansion. The electricity reforms from the late 1980's through to early 2000's resulted in a reduction in the number of EDBs from 61 to the present number of 29. The current EDBs include some which are large and have significant financial strength (this includes Orion), however, there are still a number of small, local EDBs. A number of the larger amalgamated EDB's reviewed their risks (severity and frequency), their financial strength and the possible cost and availability of insurance and chose to retain T&D exposures and invest in risk management / risk mitigation as opposed to simply insuring this risk. Orion was at the forefront of this approach. It is this integrated risk management approach which needs to be considered for the future - refer report sections 2, 5 and 6.
"… premiums have been in the region of 7.5% to 10% of the policy limit… an EDB would have to have a total loss of its electricity network at least every ten years in order to be *"in the money".*	Aon agrees that for "generic" T&D insurance, the rates appear accurate. However, as detailed in section 2, Aon recommends tailored insurance to increase insurance availability and reduce cost. It is also stressed that the premium rate applies to the limit purchased, not the value of insured assets. Therefore if, for example, a policy limit of $50 million was selected, the premium might be in the order of $3.75 million to $5 million for "full cover". (Aon understands that Powerlink, Queensland has a premium of $2 million for $20 million cover). Based on this, the comment in item 9.23.7 of Orion's insurance opex paper suggesting that insuring their $1 billion worth of cables and lines would cost $100 million per annum, could only be possible if no policy limit was utilised and "full cover" purchased.
Marsh Report Section 4: The Relationship between MD and BI Insurance Cover	
Marsh explains that BI insurance generally only operates where MD insurance is purchased and an indemnifiable loss occurs under that policy. Exclusions for depopulation, reduced consumption and customer numbers are also noted.	Aon agrees with this commentary. However, Aon notes that BI insurance for loss of substations, and other similar assets that form part of the T&D system, is generally available as these assets can be, and generally are, insured for MD loss.

Marsh Commentary	Aon Response
Marsh Report Section 5: The Evolution of Insurance Markets	
General insurance market dynamics are described in terms of profitability, capital and reaction to major catastrophic events (page 8).	Aon agrees with the general principles described, particularly that insurer capital is stronger than it has been in the past. The Canterbury earthquakes resulted in a review of capital available for NZ catastrophe risks but Aon has observed that insurers globally are recently providing increased capital to NZ. This is resulting in premium rate reductions for quality corporate risks and a softening in terms from the peaks experienced in 2011 and 2012. This trend is expected to continue and possibly accelerate.
Commentary on availability, cost and coverage for T&D described on page 9.	Similar to earlier comments, T&D insurance in a generic sense is difficult to obtain, however, utilising a risk based approach can greatly assist in achieving affordable, effective insurance.
Marsh Report Section 6: The forecast Evolution of Relevant Insurance Markets	
Marsh believes premiums will remain high particularly for Canterbury risks and Orion in particular with some "softening of pricing over time for attractive risks but insurer's current pricing for natural disaster risks will continue for the next few years".	Aon's view, as noted above, is that insurance capacity (driven by capital availability) for NZ risks, including earthquake, is increasing and has been since Q3 2012. Very significant increases and restricted terms were imposed immediately following the Canterbury earthquakes. Additional capacity has progressively been made available to the insurance market with the result that premium rates have softened for quality corporate risks. In Aon's view this is likely to continue through 2013 and beyond (subject to no new major natural catastrophe events).
Marsh Report Section 7: Strategies to Manage Risk Transfer	
Brief restatement of current position of EDBs with respect to purchasing T&D insurance.	Risk transfer when considered within a risk management framework can encompass a range of solutions which, when considered as a whole, will result in the most efficient and effective risk transfer. Orion utilises the risk management standard ISO 31000:2009 for risk management (refer Asset Management Plans for the current and past 10 year cycles) and as noted in the Civil Defence Review dated 22/6/12, "it is clear that the company performance in preparing for, and in response to the earthquake was excellent and contains some useful lessons". Strategies to manage risk transfer, which are expanded on elsewhere in this report, include: ▪ Risk identification - what are the key perils to which the various T&D assets are exposed (lines, underground and substations)? ▪ Risk severity and frequency - how big are these risks and how often will they occur? ▪ How can they be mitigated – retention, engineering, contractual indemnities or transfer through insurance or other risk financing vehicles?

Marsh Commentary	Aon Response
Marsh Report Section 8: Captive Insurance and Mutual Group Funding	
Captive concept explained including advantages/ disadvantages with the conclusion being "we do not believe that captives are appropriate for the following reasons" ▪ Captives are not suited to carry catastrophic risks ▪ Without T&D reinsurance support it is not economically feasible to fund the exposures ▪ Captives can be complex and costly ▪ Catastrophe T&D insurance is not available in the market.	The general commentary on captives is essentially correct. Difficulties with NZ as a domicile are noted (justifiably) however, the opportunities in other domiciles (such as Singapore) are not discussed. Of the reasons given for a captive not being appropriate, we note that three are intrinsically tied i.e. no T&D reinsurance being available; not feasible to fund the exposures; and, captives are not suitable for catastrophe risks. As explained elsewhere in this report, Aon does not agree that T&D (re)insurance coverage is not available. This is particularly so if the risks to the asset classes are better analysed. Given this analysis, a captive may well be a suitable risk transfer vehicle. Aon agrees captives can be costly and complex however, the cost and complexity can be minimised by selection of an appropriate captive domicile and careful program and operational design. It is also noted that Unison Networks Ltd currently has a captive "that insures certain transmission and distribution assets of Unison Networks Limited" – Unison 2012 Annual Report , Financial Statements, item 27: Related Party Transactions.
Mutual EDB funding group for T&D coverage discussion	Aon agrees with the Marsh commentary and recommendation not to proceed on this basis.
Marsh Report Section 9: Orion's Approach to MD and BI Insurance	
Marsh details recent changes to Orion's insurance programme limits, deductibles and premiums and again refers to: ▪ "a favourable change in the insurance market is most unlikely for Orion (Christchurch and Central Canterbury) and EDBs generally in the future" ▪ "Orion will probably be restricted to at least insuring its corporate buildings and key substations under its standard MD policy at highly restricted terms" ▪ "The bulk of Orion's (T&D) assets… will effectively remain uninsurable and uninsured for the foreseeable future".	Aon does not agree with these future projections. As described elsewhere in this report, we are seeing some softening in premiums and terms for quality MD/BI insurance buyers throughout NZ, including in Christchurch with this expected to continue (subject to no new major natural catastrophe events). As capacity increases in the insurance market, premiums decrease, coverage and limits expand and deductibles decrease. This is particularly true for well managed businesses with strong risk management. From the information we have available, Orion is a well-managed businesses with strong risk management. Similarly, in Aon's view, the availability and cost issues in respect of T&D coverage are not as pronounced as Marsh indicates, particularly when a thorough analysis of risks and mitigation approaches to the various assets is undertaken.

Marsh Commentary	Aon Response
Marsh Report Section 10: Network Owners Future Approach	
Marsh restates the current position and that they do "not expect any material softening or change in the insurance market that will trigger a material change to this approach in the future".	Aon disagrees with this commentary. In Aon's view, accepting the status quo can only result in the status quo. The insurance market response to the Canterbury earthquakes and the appetite for risk and related pricing is constantly changing. There are opportunities to present and package risks to insurers in different ways, particularly for well managed risks, whether currently insured or not.
Marsh Report Section 11: Catastrophe Insurance Claims can be Complex	
Marsh details the current position on earthquake claims and notes some major coverage limitations for BI and underground cables. Comment is made regarding a professional approach to resolution of outstanding claims.	Aon recognises the difficulties with large, complex, catastrophe claims, particularly due to the huge volume and severity of claims emanating from the Canterbury earthquakes. Working closely with insurers, as it is apparent is happening with Orion, and utilising professional broker and advisory services will ensure the optimal outcomes.

2. Earthquake Insurance Impact

Comment on whether the conclusions reached by Marsh and Orion regarding insurance coverage, policy excesses, and pricing (both Material Damage to network assets and Business Interruption cover) can be directly linked to earthquakes as the dominant driver.

The Canterbury earthquakes have affected all buyers of Material Damage and Business Interruption insurance in New Zealand, almost without exception.

After the earthquakes, insurers have become more disciplined in how they price risk and carefully scrutinise risks and policyholders on a case by case basis, with those in high risk areas or with high risk characteristics, facing more scrutiny than ever before. There have been some profound increases in rates and deductibles together with a diminution in capacity, particularly in the higher perceived risk zones in Wellington and Christchurch, as insurers are reaching their aggregate accumulation limits. Additionally older buildings, earthquake prone buildings and buildings noted as at risk by councils are being subjected to greater insurer scrutiny and underwritten accordingly. Insurers are often withdrawing or restricting the type and amount of cover available on such properties.

The degree of change in coverage, deductibles and premiums for each insured has varied dependent upon a range of factors including:

Location	Those located in Canterbury have been most adversely affected, followed by other high risk seismic zones such as Wellington and Hawkes Bay. However, all insurance buyers have had negative terms imposed no matter where located.
Construction	Building materials, protection and most importantly percentage of new building standard (NBS) are critical underwriting criteria.
Age	Despite NBS being a major determination, building age is still an insurer focus.
Claims	Insurers traditionally focus on loss frequency. However the earthquakes created a change with those that suffered significant earthquake losses being heavily penalised in 2011 and through the first half of 2012. There has however been a growing appreciation that the earthquakes were entirely outside insured's control and provided those that suffered major losses had and continue to adopt strong risk management practices, that they should not be penalised beyond the "new norm".

In summary, the earthquakes have been the dominant driver and are directly linked to Orion's coverage restrictions, policy excess and premium increases. This is similar to all other insureds.

However we note that, since the last half of 2012, there has been a change in underwriters approach to earthquake risk in Canterbury and throughout New Zealand as they have gained more understanding and comfort in seismic risk and engineering standards being applied across the country. Insurers have also acknowledged that in some circumstances, the terms and premiums imposed were simply an over-reaction as they struggled to come to terms with the issues. These factors are resulting in premium, coverage and policy excess improvements, particularly for those insured's that provide quality risk and underwriting information and have a demonstrable risk management process.

From the evidence of Orion's Asset Management Plans, earthquake recovery response, the Civil Defence Emergency Management Response Review and other documents, Aon would expect that Orion will benefit from this changing insurance market environment.

The foregoing comments apply to Orion's current MD/BI insurance programme.

The situation for Transmission and Distribution insurance is different with the insurance market being more restricted. However, Aon believes that insurance coverage will be available, subject to the risk management approach noted earlier. Essentially Aon recommends that the various T&D asset types, their risks, severity and frequency are assessed and then insurance markets approached for specifically tailored coverage. For example:

- **Substations/Switchgear/Pole Mounted Transformers**

  "Full" insurance coverage is generally available at current market rates.

- **Above Ground Distribution Lines**

  The major insurance concern which restricts underwriter acceptance is windstorm. Orion's investment in asset resilience and diversity could result in windstorm coverage not being required. This has been the position adopted by Orion since the demise of the Trip insurance programme in 2001. Earthquake risk in respect of these assets is insurable.

  We note that little earthquake damage occurred to these assets (reference section 4.3 Electricity, of the 29 June Review of the Civil Defence Emergency Management Response – "Overhead network damage was light") and the comments in both the 2012 and 2013 AMPs item 6.7.2, Earthquake, that "Damage to the overhead reticulation system should be easily repaired".

  Orion could therefore consider insurance options for earthquake (and other perils, excluding windstorm) subject to evaluating an appropriate limit and deductible.

- **Underground Cables**

  The major peril in respect of underground cables is earthquake. We note Orion suffered damage to 11kV cables in the eastern suburbs and to the 66kV cables to Brighton and Dallington zone substations, with replacement of the damaged cables is underway (refer 6.8.2 of the 2013 AMP). The 2013 Asset Management Plan also identifies the most significant risk to the cable network as the 66kV oil-filled cables with all at-risk joints having been replaced in 2010. While further analysis of losses and potential future losses will be required, insurance cover for underground assets is now available. The premiums and policy excesses will be determined based on factors such as assets to be insured, their location, agreement on a suitable limits, deductibles, coverage required, and underwriters understanding of Orion's risk management practices.

3. Earthquake Risk

If not the dominant driver, comment on the estimated extent to which earthquake risk is likely to be affecting the conclusions of Marsh and Orion on the availability and pricing of Material Damage and Business Interruption cover.

As noted above in 2. Earthquake Insurance Impact, Aon confirms that earthquake risk is the dominant driver of pricing and availability for Orion's MD/BI insurance cover. This is a situation which is true for most insureds.

However, as also noted previously, the insurance market is changing positively for many buyers of MD and BI insurance. Aon expects Orion and other well risk managed businesses should achieve coverage, deductible and premium benefits in 2013 and beyond. This will however require a focussed strategy and working closely with advisors and insurers.

4. Earthquake Risk Mitigation

Comment on the types of reasonable earthquake mitigating actions Aon would have expected Orion to have taken from an insurance point of view pre-earthquakes in the absence of available coverage for network Material Damage and for Business Interruption on commercially reasonable terms, including taking into account knowledge of the risks inherent in Orion's participation in the Christchurch Engineering Utilities Lifelines Group.

Based on our review, Orion has over many years utilised what Aon considers to be best practice risk management strategies to mitigate the potential for earthquake damage to their assets. (This best practice approach has equally applied to other perils.)

The process has followed the accepted standard AS/NZS 4360:2004, which has subsequently developed to the international risk management standard ISO 31000. The Orion 2013 AMP specifically notes the change to this standard.

In reviewing Orion's ten year AMPs (issued 1 April each year), we note consistent attention to, and multiple examples of, pro-active mitigation prior to the earthquakes and comments regarding the effectiveness of these plans after the earthquakes. This demonstrates Orion's pre earthquake mitigation focus; some illustrative extracts are noted below.

2006 AMP

- **6.1 Risk Management Introduction**
  Specifies risks need to be understood and where they cannot be eliminated, then training, competency, safe work practices and network design are used to control the level of risk.

- Correctly identifies Earthquake as a key risk to many assets.

- **6.5 Interdependence Risk**
  Identifies risk to other service organisations through the Christchurch Lifelines Risks and Realities documents and changes made by Orion subsequently to mitigate these risks.

- **6.6.1 Earthquake**
  Identifies earthquake probability (65% chance of a major earthquake in next 50 years) and includes an asset vulnerability assessment from liquefaction and related damage. Upgrade programmes to substations due to this assessment are identified.

2010 AMP

- **6.1.2 Risk Management Responsibilities**
  "Alignment to Civil Defence responsibilities using the 'four Rs' approach to resilience planning – reduction, readiness, response and recovery."

- **6.7 Natural Disaster**
  Details plans on the response to earthquake and other major disasters.

- **6.8 Asset Failure**
  Notes the significant risk of catastrophic failure of 66kV oil filled cables and work to replace these.

- **6.9 Mitigation Measures**
  Describes procedures and plans to avoid and/or respond to failures.

2012 AMP

- **4.1.3 Canterbury earthquakes**
  While the earthquakes and large aftershocks were significant events, work to increase the resilience of our infrastructure over a number of years has been a major factor in limiting the amount of damage to our network and in particular our key substations.

Subsequent to the earthquakes, the AMPs describe in detail, improvements in plans and strategies to reduce risk in the future.

As noted earlier, the Ministry of Civil Defence Emergency Management commissioned independent "Review of the Civil Defence Emergency Management Response to the 22 February Christchurch Earthquake" issued 29 June 2012 notes:

> *"From this thorough report and discussions with key personnel it is clear that the company performance in preparing for, and in response to the earthquake, was excellent and contains some useful lessons".*

5. Insurance Earthquake Mitigation

With the benefit of the information now available after the earthquakes, comment on the types of future mitigating actions Aon would expect Orion to take from an insurance point of view in the absence of available coverage for network Material Damage and for Business Interruption in commercially available terms.

Aon would advise that insurance coverage for network Material Damage is available although we acknowledge some aspects may be difficult with Business Interruption insurance for overhead lines and underground cabling likely to be the most challenging.

In Section 2 of this report, the Earthquake Insurance Impact describes the process Aon recommends to review the risk and insurance requirements of the three major network components:

- Substations;
- Above ground distribution lines;
- Underground cables.

The outcome of this analysis will determine insurance requirements and provide the necessary data to assess the cost effectiveness of insurance or alternative risk financing solutions such as a captive insurance company.

6. Self-Insurance

Comment on whether in the case of Orion's circumstances it would be possible to calculate hypothetical self-insurance covers, excesses and self-insurance premiums for network Material Damage cover and for Business Interruption cover in the absence of commercially available insurance coverage on commercially reasonable terms relating to cover, excess and pricing.

It would be possible to calculate hypothetical self-insurance covers, excesses and self-insurance premiums for network Material Damage cover and for Business Interruption cover.

An optimal risk finance program needs to be aligned to Orion's underlying risk profile, risk tolerance and risk appetite and an analysis of the cost of insurance capital. The level of retention and profile of retained risk in terms of aggregated exposure and structure would therefore be under constant review.

Similar to the response to report Section 5, Aon suggests a risk review of the three major network components to determine the parameters of insurance that might be required.

From this analysis, hypothetical insurance coverage can be determined which could then be priced in the insurance market. Additionally, utilisation of insurance benchmarking tools (global and/or national) would assist in this analysis.

The outcomes of this could be utilised to purchase insurance, or for Orion to retain the risk and establish a commercially determined self retention programme, or consider alternative risk financing such as a captive insurance company. As noted earlier, Unison Networks Limited utilises a captive for this purpose.

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