MARSH

MARSH 3D

DIRECTLINK

INSURANCE PRICING REPORT FOR THE PERIOD COMMENCING 1 JULY 2020

31 JANUARY 2019

CONTENTS

THE PRIVACY OFFICER
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RELIANCE & DISTRIBUTION

Marsh Pty Limited (Marsh) has been engaged by Directlink to provide insurance premium projections in relation to Directlink for the period effective from 1 July 2020 to 30 June 2025.

Reliance's 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.

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.

In carrying out our investigations and providing the report, we have acted solely and exclusively for Directlink and we have assumed no duty to advise AER or any other entity or person. By consenting to the report being given to AER as part of the regulatory submission, we are not taken to have assumed any duty to advise you or to consider your circumstances or position. The report is provided to Directlink and AER only for the purpose of assisting in formulating of the revenue proposal.

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 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.

Disclosure

Marsh act's as the appointed insurance broker for certain classes of insurance for Directlink and as such we may have advised, designed or placed the insurance program to which this report refers.

INTRODUCTION

We would like to thank Directlink for engaging Marsh Pty Ltd (Marsh) to assist with the forecasting of insurance costs for the period commencing 1 July 2020.

The services Marsh have been asked to provide is an insurance cost for a property and liability program based on Directlink's risk profile and claims history. We will also use best endeavours to forecast future insurance premiums based on market trends.

The benefits of utilising Marsh include:

- A depth of knowledge within its Power and Energy Practice Group
- Current insurance advisor APA, EII and Directlink
- A carefully selected project team with extensive experience in the electricity sector and with this type of project.

We would like to acknowledge the insurance team at APA Group for providing assistance and the information necessary to complete this report.

Warwick Royson | Principal

Energy & Power Practice

Marsh

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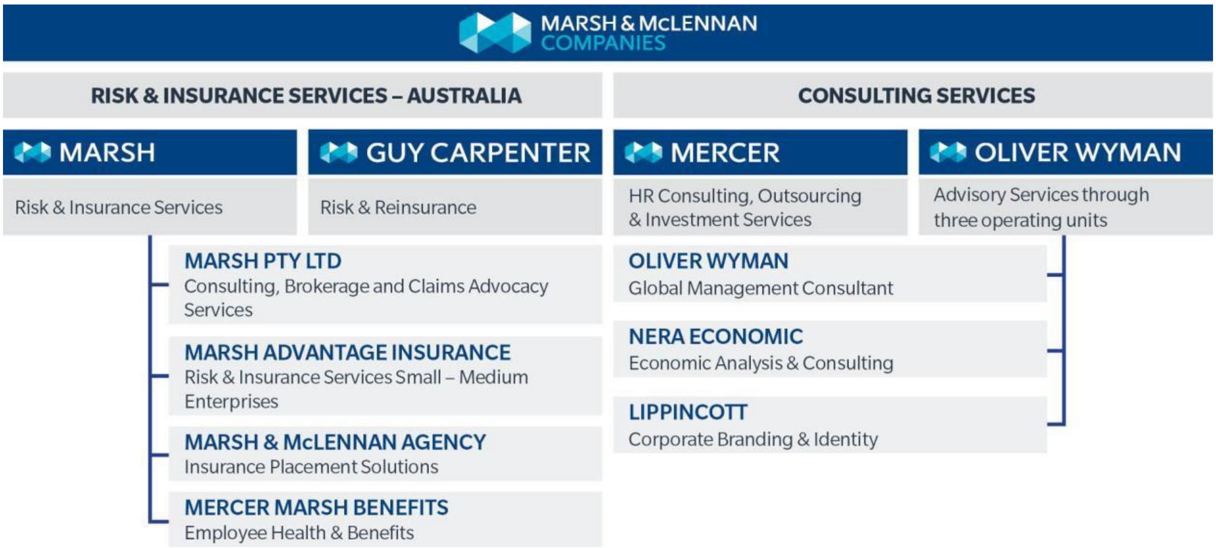
DATE OF ISSUE

31 January 2019

ABOUT MARSH

Marsh & McLennan Companies Inc. is a global professional services firm providing advice and solutions in the areas of risk, strategy and human capital with 60,000 employees in more than 130 countries generating over $13 billion in annual revenue. Marsh & McLennan is the parent company of Marsh, a global leader in insurance broking and innovative risk management solutions; Guy Carpenter, the risk and reinsurance specialist; Oliver Wyman Group, advisory services; and Mercer, the global provider of consulting, HR and investment services.



Marsh has been a pioneer in risk and insurance services for over 140 years. Approximately 30,000 Marsh colleagues provide risk management, risk consulting, insurance broking, alternative risk financing, and insurance program management services around the world. Marsh was established in Australia in 1953 and has over 800 staff in Australia, servicing clients from offices in every state and territory.

Our Website

Visit our website at www.marsh.com.au for information about our extensive range of products and services.

PREMIUM PROJECTIONS

Overview

Our premium projections need to consider various factors including the risk profile of Directlink including its loss history, the current and forecasted market conditions and the coverage contemplated. Therefore, this report is broken up into the following sections:

- Insurance Market Conditions
- Underwriting Information (incl. loss information)
- Coverage Assumptions
- Property premium projections.
- Liability premium projections.

Insurance Market Conditions

Broadly speaking, global property and casualty insurance markets oscillate between hard and soft periods demonstrating the various characteristics illustrated by the diagram to the right.

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.

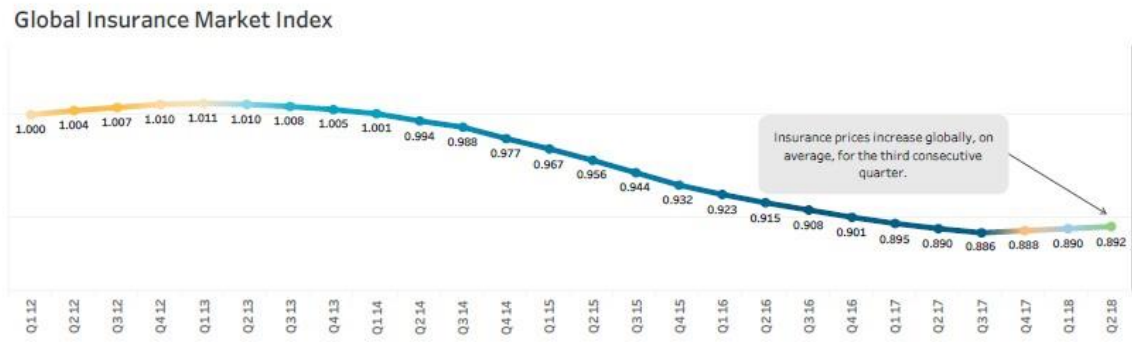
In between these two market extremes are transitional phases. Importantly, it is rare for the insurance market to follow the cycle full-circle as events like natural catastrophes and economic influences distort the natural order.

In 2017, the insurance market moved out of the “Soft Market” and moved through a transition into a “Hard Market” which has continued to exist in 2018. This has mainly effected Property and Directors and Officers placements but pressure is beginning to build in other lines including Motor and Liability.

We are seeing capacity reductions from many insurers and local underwriters having to refer more to their regional underwriting managers. Market consolidation including Chubb/ACE, XL/Catlin and most recently AXA/XL has reduced the amount of capital deployed. Other agreements between insurers, such as CGU and Berkshire Hathaway (the former ceding their ASX portfolio to the latter), has also reduced capacity.

Global Market Overview (All Classes)

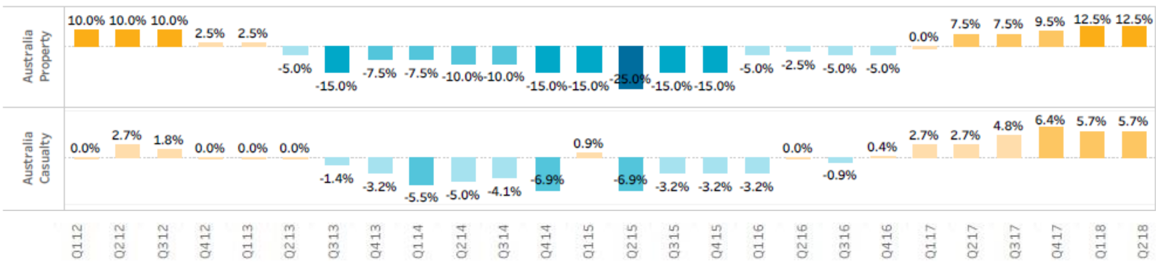
Driven by increases in property and financial and professional lines, global commercial insurance prices increased, on average, in the second quarter of 2018, marking the third consecutive quarter of increases. The market remained fairly stable with prices fluctuating within a relatively narrow range across most product lines and geographies. While average prices trended up overall (driven primarily by the UK and **Australia**), pricing decreased slightly in Continental Europe and Asia.



Source: Marsh Global Insurance Market Index Q2 2018

Australia Composite Insurance Pricing Change

As can be seen in the chart below, since the beginning of 2017, there has been a clear transition of the market applying price increases across both property and casualty lines. Note that the pricing change captures year-over-year rate movement, measured quarterly (the increases are not cumulative over each year).



Source: Marsh Global Insurance Market Index Q2 2018

Australian Insurers Combined Operating Ratios for 2017

The Property (Fire & ISR) class of insurance remains unprofitable in Australia. This class of business has been loss making for some years and despite two years of rates increases, the outlook to return the portfolio to profitability remains challenging suggesting that further increases are required.

Liability has performed better but still below target requiring gradual rate increases.

Lloyd’s Markets

The placement of Directlink insurance does not need to be within the Australian market. Therefore we should consider international insurers, but in particular, Lloyd’s as they are licensed by the Australian Prudential Regulatory Authority to conduct business in Australia.

2017 (along with 2005 and 2011) was one of the worst years in the Lloyd’s market’s 330-year history with four out of five syndicates posting a loss, with 17 reporting a combined ratio (claims + operating expenses ÷ revenue) in excess of 150%. Overall, Lloyd’s had an underwriting loss of $3.4bn, representing a 114% combined ratio.

Over the past three years, 52% of syndicates have been unprofitable and the Lloyd’s Corporation is scrutinizing their portfolios. 11+ managing agents have required “high-touch” intervention and face potential closure. <u>As a result, Lloyd’s insurers will be looking to increase premiums where they can.</u>

Whilst casualty has been one of the better performing lines of business at Lloyd’s, it was still unprofitable in 2017

Underwriting Information

Overview

Directlink is a bi-directional 180MW capacity HVDC transmission line in New South Wales which is owned by Energy Infrastructure Investments (EII). Directlink is completely within New South Wales, but effectively is a power transfer interconnector between the Queensland power system to the New South Wales power system. The converter stations are located at Bungalora and Mullumbimby in New South Wales.

Directlink commenced full commercial operation on 15 December 2000 as a market interconnector. On 6 May 2004, Directlink submitted an application to transfer Directlink to a regulated network and be eligible to receive a maximum allowed revenue, in accordance with the NER. The Australian Energy Regulator approved the application and the Directlink facility commenced operation as a regulated service on 21 March 2006.

Operational control is from a manned (24 hours a day, 7 days a week) remote control room, staffed by fully trained operators. Directlink receives dispatch targets from AEMO on a five-minute basis, in a manner similar to scheduled generation plant. Directlink dispatch (both direction and magnitude) is optimally determined by the NEM Scheduling, Pricing and Dispatch software.

APA Group manages and maintains Directlink and is a shareholder of EII.

Directlink is a bipolar DC transmission link that has been designed by ABB with HVDC Light technology.

The transmission system effectively comprises three main assets:
1. Bungalora converter station;
2. Mullumbimby converter station; and
3. DC transmission line.

The converter stations at each end of the DC cable have essentially the same design, and are connected to 110kV and 132 kV AC systems at Bungalora and Mullumbimby respectively. Each converter station consists of three independent 65 MVA converters.

The 110 kV and 132 kV AC connections include electrical protection schemes that coordinate fully with the Powerlink, Country Energy, and TransGrid system protection schemes and achieve the protection clearance times required by the NER.

Each converter station comprises three converter systems with each system including typical HV AC switching and filtering equipment, 70MVA main power transformers, converter reactors, IGBT packages and converter building.

The Directlink cable route is approximately 59km in length. A number of different techniques were applied to install the cables including open-cut-and-fill, direct burial by cable plough, Galvanised Steel Trough (GST) and directional drilling. A total of six DC transmission cables are installed along the route. Each pair of cables is dedicated to a pair of converters and cannot be reallocated to a different pair of converters. The RMS DC cables consist of a central core of conducting material (aluminium), surrounded by a thick, solid polymer (XLPE) insulating layer. A screen or shield surrounds the insulating layer and an extruded aluminium layer bonded to the hard outer plastic (HDPE) insulating jacket completes the cable.

There is also a buried AC cable approximately 4 km in length that connects the Bungalora converter station to the Terranora substation.

Details of Bungalora Converter Station

Location: Bungalora, New South Wales 2486

The Bungalora HVDC converter station has 3 x 65 MVA poles. This is voltage source converter technology which does not require converter transformers. This station is the northern end of the Directlink which connects the Queensland and New South Wales power grids.

There are three, three-phase, 65 MVA oil filled transformers on site (one transformer for each pole). The transformers are supplied from the 132 kV Lismore and Dunoon substation. The transformers step down the voltage for the converter station.

There are three, bipolar, overland, 80 kV, HVDC cables connecting each of the three poles at Mullumbimby to the three poles at the Bungalora converter station. This 60 km cable is predominately laid underground except for where it is run above ground in a Galvanised Steel Trough (GST) alongside railway tracks, over bridge crossings and through tunnel crossings.

There is also a 110 kV underground cable connecting the AC switchyard to the Energex Terranora substation. Electrical protection for this cable is provided by relays located at the APA Directlink site and at the Energex substation. The cable is owned and maintained by APA.

Details of Mullumbimby Converter Station

Location: Mullumbimby, New South Wales 2482

The Mullumbimby HVDC converter station has three 65 MVA poles. This is voltage source converter technology which does not require converter transformers. This station is one of the two converter stations for the Terranora Link (aka Directlink) which connects the Queensland and New South Wales power grids.

There are three, three-phase, 65 MVA oil filled transformers on site (one transformer for each pole). The transformers step down the voltage for the converter station. There are three, bipolar, overland, 80 kV, HVDC cables connecting each of the three poles at Mullumbimby to the three poles at the Bungalora converter station.

Property Premium Projections

Our property premium projections are largely based on an exposure method.

The rates below are based on the exposure presented by Directlink, the claims history and the economies of scale that is provided by the greater EII portfolio.

Directlink is owned by EII and would be insured as part of a portfolio of assets. The other assets in the portfolio would include gas transmission pipelines, small power stations, gas processing plants and another HVDC connector..

The premium projections below assume no adverse claims within the EII portfolio during the 2020-25 Control Period and CPI at 2%. It also assumes that the NSW Emergency Service Levy regime will remain in place (with the levy being static throughout period) and no changes to Terrorism and Stamp Duties.

The "% Change Due to Market" is our best forecast based on information available today. Rate increases are expected to continue before reaching a time where they are closer to "technical rates" that would make the commercial property portfolio of insurers sustainable.

Property as part of EII Portfolio	
Year	**Total excl GST**
2019/2020	$388,857
2020/2021	$426,381
2021/2022	$467,527
2022/2023	$500,722
2023/2024	$523,504
2024-2025	$533,975

Year	% Change due to Market
2020/2021	7.50%
2021/2022	7.50%
2022/2023	5.00%
2023/2024	2.50%
2024-2025	0.00%

Liability Premium Projections

As Directlink is owned by EII, it would be insured as part of a portfolio of assets. The other assets in the portfolio would include gas transmission pipelines, small power stations, gas processing plants and another HVDC connector. The basis of rating of a liability program is typically done on a layered basis with either a single insurer or group of insurers insuring a layer of the tower. The premium for each layer reduces as the probability of a loss exceeding the layer's attachment point reduces. It comes to a point where insurers would require a minimum return on capital deployed and therefore including several other assets (that do not introduce a significantly higher risk) would make very little impact to the premium. Therefore, insuring for a portfolio of assets is much more economic that buying a "standalone" tower for each asset.

The premium forecasted below is based on Directlink's proportion of an EII portfolio placement.

The "% Change Due to Market" is our best forecast based on information available today. Rate increases are expected in the next few years as insurers try to reverse the trend of a continuing decline of premiums that occurred during the soft market. We have recently seen insurers reduce capacity deployed on portfolios and the continuing mergers and acquisitions within the insurance sector will further reduce the level of competition.

Liability as part of EII Portfolio	
Year	**Total excl GST**
2019/2020	$56,489
2020/2021	$59,313
2021/2022	$62,279
2022/2023	$63,836
2023/2024	$65,432
2024-2025	$65,432

Year	% Change due to Market
2020/2021	5.00%
2021/2022	5.00%
2022/2023	2.50%
2023/2024	2.50%
2024-2025	0.00%

APPENDIX 1: CONSULTANT'S CV

Warwick Royson

Experience

Warwick has worked in the insurance industry for over 20 years, specialising in the Power & Energy sector for the last 14 years. He has been with Marsh for 4 years.

Warwick built his career in New Zealand and England before moving to Australia in 2004. During this time he worked for both major insurers and international brokers.

Warwick has in depth knowledge of the power generation, transmission, distribution and retail sector working with clients such as Networks NSW, Origin Energy, Snowy Hydro and Contact Energy (NZ). Other major clients have included APA Group, Caltex Australia, Singtel Optus, Roc Oil, First Gas (NZ) and Sydney Catchment Authority.

Qualifications

Bachelor of Business Studies (International Business)

Diploma of Financial Services (Insurance Broking)

Australian and New Zealand Institute of Insurance and Finance (Senior Associate)

Certified Insurance Professional (ANZIIF)

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