# **TRANSGRID**

PROJECT ENERGYCONNECT (PEC)
INSURANCE REPORT

DATE: 3<sup>rd</sup> September 2020 (updated)



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### 1. Executive Summary

Aon is pleased to assist TransGrid through overviewing and detailing high level insurability, risk allocation and insurance financing solutions for Project EnergyConnect (PEC) in support of its application for regulatory approval of this Project.

#### **Focus of this Report**

As agreed with TransGrid, the focus of this report has been to undertake a review of the information received and provide commentary based on industry practice and peer comparison with respect to:

- estimates of incremental premium costs payable by TransGrid relating to PEC, for the remainder of the current regulatory period, with separate estimates for each year
- estimate of on-going annual incremental costs for insuring PEC once commissioned i.e. for each year of 2023-24 to 2027-28 regulatory period
- explaining the approach (and techniques), reliance and assumptions made in estimating the incremental premium costs for PEC
- an overview of Principal Arranged Insurances including details of positive/negative features when compared against contractorsupplied project insurances.
- details of a Project Insurable Risk Profiling methodology that has commonly been adopted across a broad variety of

 infrastructure and commercial projects, including details of typical scope and outputs.

A key deliverable of this report is to provide insurance cost estimations for TransGrid's financial modelling purposes without approaching insurers

#### **Prudence and Good Practice**

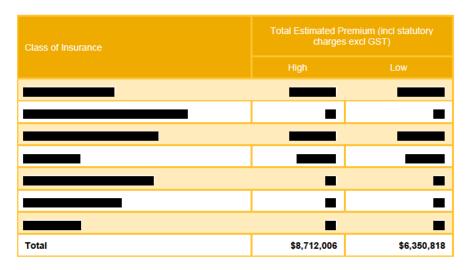
Our comments and recommendations in this report represent the standard of prudence and good practice that we would expect for clients in the electricity industry in relation to procurement of insurances to adequately address the identified risks and interests of TransGrid, its equity investors including the Contractors (to the extent that insurance is commercially available to do this).

#### **Indicative Insurance Program Costs**

We have designed the Indicative Insurance Program for this Project based on our insurance knowledge and expertise, industry benchmarking against projects of a similar standing and nature internationally, and review of the information provided by TransGrid to us. We believe that premium costs for the minimum recommended insurances could range between the estimations noted below:



Construction Phase - total estimated costs for the entire project, with incremental cost estimates for each year provided in Section 3 of this report.





Premium costs for Construction Phase represents an estimation in nominal dollars for the entire project. A breakdown of these estimation for the reminder of the regulatory period is provided under Section 3 of this report for TransGrid's financial modelling purposes only.



Please note the above does not include pricing for Professional Indemnity Insurance required during the Construction and Defects Phases of this Project. Based on discussion with TransGrid we understand that Professional activities such as design works in relation to this Project is likely to be contracted out and the obligation to procure professional indemnity insurance transferred to the Contractor.

Owing to the state of the Professional Indemnity Insurance market, such an insurance whether procured by TransGrid or the Contractor is likely to be prohibitive.

There have been constraints on the level of analysis we have been able to undertake due to gaps in information at this early stage of the Project. As a result, several assumptions have been made in the design and overview of the insurance requirement. These are outlined in the Insurance Program Analysis section of this report.



Please note this excludes any insurance broker costs / fees for the placement of these program.

This request has come at a time of recent and developing unprecedented dynamism within general insurance markets globally. The construction insurance market continues to tighten and with the market in transition, the present COVID-19 issue has also created a degree of uncertainty around losses and presents a challenge in estimating any potential future impact on the insurance industry arising from COVID-19. Ultimate loss in this sector is not known until a project overruns it's scheduled completion date. Current market conditions mean there are restrictions in cover, particularly regarding defects, sub-limits and other extensions are under scrutiny. Excesses are also increasing, particularly for larger projects where minimum deductibles will apply.

We have provided commentary with respect to the design, costing and underlying assumptions relating to the Indicative Insurance Costs in the Program Analysis section of this report. These costings have been developed in consultation with Aon's Subject Matter Experts in the Construction National Placement team and industry benchmarking.

It is important to note that:

- indicative costings have been developed for TransGrid in support of its application to AER;
- the cost has been estimated from a scope of work determined by a limited review of the project consequently, significant assumptions have been utilised in developing the indicative costing range;
- at this stage, it is unclear whether TransGrid will procure Project Delay or "Delay in Start Up" insurance to protect any financial loss exposure arising out of PEC Project. Consequently, no costs allowance has been made in relation to this insurance cover.
- any additional insurance costs (other than that included in the report) that may arise during the operations of the Project have not been considered:
- cost estimates are based on insurance market conditions and insurer appetite at date. These conditions are particularly dynamic in recent times.
- statutory charges (where applicable) have been included based on rates applicable as at date.
- final costings will be subject to receipt of additional underwriting information and negotiation of terms in the global insurance market.



# 2. Designing a fit for purpose Insurance Program

#### Project Snapshot<sup>1</sup>

Project EnergyConnect is a major new capital project involving a new interconnector between SA and NSW. TransGrid are undertaking a costing analysis and have commenced the tender process for the EPC contract in support of their application for the regulatory process.

TransGrid and ElectraNet have developed a 900 km interconnector and network support options aimed at reducing the cost of providing secure and reliable electricity transmission between NSW and SA in the near term, while facilitating the longer-term transition of the energy sector across the National Electricity Market ('NEM') to low emission energy sources.

TransGrid will partner with ElectraNet to deliver a high voltage electricity interconnector between the power grids of SA (starting at Robertstown) and NSW (finishing in Wagga Wagga) with an added connection to Victoria (Red Cliffs), known collectively as Project EnergyConnect.

TransGrid will be responsible for planning and construction in NSW. Whilst technically aligned to TransGrid's core operations and technical capabilities, the value and nature of PEC is significantly greater than anything TransGrid has delivered in the past under its

regulatory regime as a single project. It is also significantly greater in scale, cost and complexity than any single project considered by the AER to date.

It is anticipated that major construction will commence following planning approvals and acquisition of acquisition of easements and land in **March 2021** with the asset fully commissioned and energised by **June 2023**.

#### Source of Information

Aon's findings and analysis are based upon information provided by TransGrid. A list of key documents supplied by TransGrid is included in Section 5 – Appendices

#### **Description of Approach and Methodology**

#### **Risk and Insurance Methodology**

The present draft PEC\_EPC FIA and General Conditions (506764040.8) contemplates insurance program to be arranged by the Contractor (Clause 19). Whilst traditionally Principals may have passed the responsibility for effecting insurance of the works and third party (public) liability insurance to the contractor(s), based on our experience for complex infrastructure project like PEC, a tailored risk management and insurance program is paramount.

This is to also ensure that any risk transfer solution aligns with TransGrid's overarching objectives as outlined in the PEC – PIP Final Gold pdf below:

1) Deliver value for securityholders by ensuring that all outturn project costs are included in the Regulatory Asset Base ('RAB')

<sup>1</sup> Source: PEC - PIP Final Gold pdf.

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- 2) Avoid retention of risk for which no allowance is made within the regulatory weighted average cost of capital ('WACC')
- 3) Deliver a fit for purpose transmission asset that can be safely and efficiently operated over its design life

As a result, in recognition of the above objectives, we recommend that TransGrid consider an insurance solution for PEC have using a seamless "Cradle to Grave" program methodology covering each phase of the project life cycle which is most effectively arranged by the principal using a **Principal Arranged Insurance approach** (PAI).

By controlling and placing the insurances, the party sponsoring the project (i.e. the principal) can have confidence and transparency that appropriate cover is in place for the project life cycle. Furthermore, additional covers to protect TransGrid financial loss, in particular, Project Delay Insurance or Delay in Start Up (DSU) cover can also be effected, if required.

A PAI approach does not relieve the contractor(s) of responsibility for loss or damage to the works, but merely moves the requirement to insure those risks to the Principal and ensures control of the program.

#### "Cradle to Grave" Insurance Solution

In constructing the appropriate policy to cover the life span of the project, it is important that a seamless program structure over Marine (Transit), Construction and Operational phases is designed to ensure the policies dovetail into each to avoid any potential gaps in cover.

Although these project phases require separate insurance covers, for a project like PEC, there will inevitably be an overlap between each phase which can lead to gaps in cover if policies are not arranged in conjunction with each other.

A "Cradle to Grave" program structure would also augment TransGrid objectives by providing value for money, transparency of coverage and fitness for purpose in designing a bespoke placement strategy for the Project.

## Leveraging against TransGrid's existing Operational Insurance Program

TransGrid maintains substantial operational insurance program which has been serviced by Aon since their privatisation by NSW State. Over this period, TransGrid has developed meaningful relationships with its key insurers including a "bank" of claims-free trust with these markets.

Many of the incumbent operational insurers hold the appetite and capacity for major infrastructure construction projects and, importantly, the ability to insure bushfire liabilities which is a segment of the insurance market that has taken substantial losses locally and internationally over recent years.

Aon believes that these existing relationships can help in the development of PEC PAI Program, whilst building market competitive tension through strategic use of alternative competing markets and capacity for the Project to optimise the total cost of insurable risk for this Project.

Ultimately, and subject to the nature of separable portions contained within PEC, it is logical that key construction insurers are also heavily associated with your operational program aligned to respective PC

dates. This is especially critical should any inherent defect evolve post completion of the Project works.

## Some other benefits of PAI approach include the following.

#### **Disputes**

Avoid conflict between insurers on claims where multiple insurance policies have been affected by Contractors and or Subcontractors.

#### Interaction and transition to the operational program

Where TransGrid has arranged the insurance program for the construction phase, it is easier to plan the proper transfer of coverage into an operational insurance program to fit with the handover of the Project, addressing separable portions of the works.

#### **Deductible vs premium**

When insurance is arranged by the Contractor, those costs are passed on to the Principal/Owner. It is therefore in the Contractors interest to keep the deductible low at the expense of higher premiums. A PAI Program will enable TransGrid to set the deductible at a level that result in the best value for money whilst keeping the Contractor accountable for good risk management practices through a balanced self-insured retention.

#### **Control of Claims**

TransGrid's assets and funds are at risk and it is paramount you control any proceeds from insurance claims given your interest in the project being completed in time and without incident.

Utilising the PAI approach ensures that claims are controlled by TransGrid and paid directly to you, thus avoiding delays which can easily occur where individual contractors are allowed to arrange their own Insurance

Programs.

#### Value for TransGrid

With many Principals looking for greater control over the placement of their insurance and seeking tighter risk management procedures, significant saving has been observed by Aon's clients on major projects using the PAI approach.

Furthermore, additional savings are achieved with the removal of margins and overheads typically passed on by EPC / D&C Contractors. When placement of the insurance is strategically balanced with insurers who can participate in the operational insurance program once the assets are commissioned, competitive tension can be created resulting in a better outcome for TransGrid.

By comparison Contractor Controlled Insurance Programs (CCIP) are arranged by the Contractors for their interest as required under an EPC / D&C contract where factoring of the principal's interests may simply result in contractual compliance undertakings

Some other considerations when insurance is arranged by the Contractor, include:

#### Insolvency

Most insurance policies contain an exclusion whereby the insurance becomes void if the policy holder goes insolvent.



#### **Insurance Margin**

It has been our observation that the Contractors margin on insurance is typically as much as 30-50% of the actual insurance costs.

#### Settlement of claims/loss payee

Under a CCIP, the Principal does not have control over the settlement of a claim or how the proceeds are allocated. Principals relying on Contractors policies also have to deal with insurers that they have very little or no relationship with resulting is potential delay in finalisation of insurance claims.

#### Phased handover and separable portions

Contractors' policies commonly cease once handover or occupation has occurred, but Practical Completion has not yet been issued. This can cause a 'gap' in cover particularly in circumstances where minor works are still to be completed and the property (Industrial Special Risk) insurer has not accepted risk of the new asset.

#### **Insurance Program Analysis**

This Insurance Program analysis does not purport to be an exhaustive list of insurance, rather, it endeavours to focus on the more significant and traditionally available insurances, which can be procured from commercial insurers.

To assist in your review, for ease we have referenced the applicable insurance draft clauses in PEC\_EPC against our recommendation for allocation of insurance placement responsibilities in the table below.

Class of Insurance	Principal (TransGrid)	Contractor	Engineers, Suppliers and Consultants	Subcontractors
Contract Works - Material Damage (19.2.1)	Insures	<b>√</b>	✓ but only for site activities and ex. PI	✓
Third Party Liability (19.2.4)	Insures	✓	1	<b>√</b>
Project Delay / Delay in Start Up	Insures (if required)	x	×	x
Marine Transit (19.2.7)	Insures	✓	√ ex shipowners / freight forwarders etc.	<b>✓</b>
Marine Delay in Start Up	Insures (if required)	x	x	×
Professional Indemnity (19.2.3)	Insures (if required)	Insures own	Insures own	Insures own, where appropriate
Workers Compensation (19.2.5)	Insures own	Insures own	Insures own	Insures own
Motor Vehicle (19.2.6)	Insures own	Insures own	Insures own	Insures own
Plant and Equipment (19.2.2)	Insures own	Insures own	Insures own	Insures own



#### Key

Insures TransGrid to arrange the insurance.

√ A party to be included as an Insured in the policy arranged

× No insurance required.

## Recommended Allocation of Insurance Responsibilities under the EPC Contract

It is important from the outset that the responsibility to insure is clearly defined in the EPC contract and agreed by both parties.

We recommend that TransGrid consider the following allocation of responsibilities to insurance under the EPC contract based on the PAI approach discussed in this report:



<sup>\*</sup> Project delay cover can only be arranged by the Principal if arranged in conjunction with the Contract Works and Marine Transit policies

This approach ensures that the key project insurances are aligned to the Project's risk profile and lifecycle, are of a nature that addresses and satisfies insurable risks through appropriate and tailored scope of coverage, ensures competitive terms and provides a common but comprehensive basis of key insurance coverage for all Project stakeholders including Contractors of every description and tier engaged on the Project.

Contractor arranged insurance identified above are commonly held by Contractors and are typically available under a Contractor's annual insurance program arrangements. They also include those classes of insurance that are statutory and compulsory in nature for any business.

We understand that agreements with the Contractors and other parties are presently being finalised and we would be happy to assist TransGrid in finalising these agreements to ensure they are compliant with the recommended insurance program structure.

The summary of insurances which follow represent the coverage requirements for the insurance to adequately and effectively address and protect the interests of TransGrid, its equity investors including the Contractors (to the extent that insurance is commercially available to do this).

#### **Contract Works (Material Damage) Insurance**

The Contract Works (Material Damage) policy will provide cover up to the Estimated Contract Value (ECV) of the Project and for Additional Cost Limits, Escalation and Contingencies plus the maintenance period in relation to the project.



The policy will provide coverage for physical loss or physical damage to project works arising within the project period declared within the ECV including but not limited to: -

- Preliminary (Early) Works
- Construction Works
- Existing Structures
- Construction Plant (if required)

This Principal arranged policy will cover the interests of all parties, i.e. TransGrid, Contractors, sub-contractors, financiers etc under a single Policy. TransGrid can determine the extent and level of cover to be arranged and can draft the necessary insurance policies prior to awarding contracts or commencing work to meet the exact requirements of the project.

#### **Third Party Liability Insurance**

This policy will provide cover to TransGrid, Contractors, Subcontractors etc for third party liability for bodily injury and physical damage arising from the project works, whilst they are being carried out.

The policy will also cover liability arising from the works from the date of on-site commencement to the date of practical completion, followed by the defects liability period (cover during the defects liability period will be on a limited basis as the ongoing operational insurances covered by TransGrid will take up the majority of risks).

This Principal arranged policy has distinct advantage, in that the project will have a uniform liability limit and coverage benefit. In this respect, the level of liability that your Contractors carry will vary depending on their size and the value of their contract.

#### **Marine Transit Insurance**

Marine Transit policy will provide cover for loss of or damage to goods whilst in transit. Transits for the project within Australia will be covered by the Contract Works policy. Transits relating to equipment's procured from overseas suppliers can be covered under a Project Specific Marine Transit Policy.

A Project Specific Marine policy procured by TransGrid can ensure that claims are controlled by TransGrid and paid directly to them, thus avoiding delays, which can easily occur where individual suppliers are allowed to arrange their own insurance program.

#### **Project Delay Insurance / Delay in Start Up**

Delay in Start-up (DSU) insurance will provide protection in respect of financial losses suffered by TransGrid resulting from the delayed completion of the project (and therefore the delayed commencement of operations), provided the delay is caused by an occurrence for which there is indemnity under the Contract Works policy.

This policy can also be set up to only cover any additional extra cost incurred during the delay period, if there are no financing requirements.



Based on our experience, completion of projects like PEC are reliant on numerous moving parts/parties. Each part or party represents a differing risk and impact to completion. Should a risk eventuate, given the forecast costs of the project, the potential period of interruption associated with some of those risk, the financial loss could be significant.

Typically, a Principal will seek relief from contractors in the form of liquidated damages (LADs) due to any delay. However, this form of relief is conditional. For example, if damage to the works arises as result of a "force majeure" peril (i.e. a cause outside the control of the contractor(s)), the contractor(s) will generally be granted an extension of time for completion of the works. Damages (liquidated or otherwise) will not apply.

This insurance can only be underwritten in conjunction with the Contract Works (Material Damage) policy.

#### **Marine Delay in Start Up Insurance**

There may also be the need to consider insuring for consequential losses incurred in circumstances where lost, damaged or delayed delivery of hi-tech, long lead specialised equipment or materials could give rise to a deferred completion. This is another form of the Delay in Start Up insurance referred to earlier.

Marine Delay in Start-up will provide protection for loss of or damage to goods whilst in transit and any financial loss suffered by TransGrid resulting in the delayed completion of the project.

This insurance can only be underwritten in conjunction with a Marine Transit policy.

#### **Professional Indemnity (PI) Insurance**

This policy provides cover for Contractor's liability for acts of errors and/or omission of the Contractor and/or their Consultants / Subcontractors arising out of a breach of their Professional duties.

Due to cost considerations, it will be preferable for the Contractors /Subcontractors / Consultants to provide this cover from their annual policies rather than arranging a project-specific policy, which would only be available at significant cost to the Project. The key issue when relying on contractor's PI policies is having a strong obligation on these parties to carry this type of insurance and for TransGrid to have a strong system for checking compliance with this not just at the outset of the project but throughout its term. Many companies continue to do so until 6 years after completion in view of the "claims made" nature of this policy.

#### **Workers Compensation Insurance**

TransGrid must insure their liability at law against injury to their employees in accordance with the laws of state or country that the employment contract is entered into. Similarly, there should be a requirement that Contractors and Subcontractors maintain their own workers compensation insurance.

## Motor Vehicle (Including Third Party Property Damage) Insurance

Providing liability insurance for property damage arising from the use of any registered vehicles. Such insurance is typically the responsibility of each party involved in the project.



# 3. Insurance cost estimations for TransGrid's financial modelling purposes

#### **Indicative Insurance Program Costs**

Based on our insurance knowledge, expertise and industry benchmarking information we have designed the Indicative Insurance Program for the Project using a "Cradle to Grave" program structure.

These costings have been developed on the basis that TransGrid would have the obligation to arrange these insurances using the PAI approach, and where a deduction of the same cost may be extracted from the EPC Contractor(s) bid estimate.

At this stage, given the EPC nature of liabilities / indemnities, we have not included any costing for PI. We expect that Professional activities such as design works in relation to this project is likely to be contracted out and the obligation to procure professional indemnity insurance transferred to the Contractor. Also, we have not included any costing for delay in start-up insurance as presently we do not have visibility / understanding of any revenue exposure for this project. We have also not considered insurance for Environmental Liability or Cyber.

A breakdown of the costs including statutory charges, for the minimum recommended insurance to be placed by TransGrid is provided under Section 5 - Appendices.

Please note this excludes any insurance broker costs / fees for the placement of these program, all premiums are indicative of "net of brokerage" placement structure.

#### **Insurance Program Limits / Retentions**

Limits described in this report and used for the purposes of our costing are based on information supplied by TransGrid and Aon's review of the minimum requirements of this project, benchmarked against other like projects.

Deductibles and/or Excesses applying to the respective PAI insurance policies used in this report has been benchmarked against projects of a similar standing and nature internationally. The levels of such respective self-insured retentions will need to be addressed with Contractors, as per the Contract terms and conditions, to ensure Contractors remain cognizant of their ongoing risk management responsibilities associated with the safe delivery of services to the Project.

We recommend an insurable risk workshop in order to ensure that the proposed program, its limit, coverage and excesses are appropriate.

## Assumptions made in estimating the incremental premium costs

It is important to note that:

- indicative costings have been developed for TransGrid in support of its application to AER;
- the cost has been estimated from a scope of work determined by a limited review of the project consequently, significant assumptions have been utilised in developing the indicative costing range;



- at this stage, it is unclear whether TransGrid will procure Project Delay or "Delay in Start Up' insurance to protect any financial loss exposure arising out of PEC Project. Consequently, no costs allowance has been made in relation to this insurance cover.
- any additional insurance costs (other than that included in the report) that may arise during the operations of the Project have not been considered;
- cost estimates are based on insurance market conditions and insurer appetite as at date.
- statutory charges (where applicable) have been included based on rates applicable as at date.
- final costings will be subject to receipt of additional underwriting information and negotiation of terms and coverage conditions in the global insurance market.

#### Factors that affect the cost of Insurance

A key factor that affects the cost of Insurance is the Market Conditions. We have included a snapshot of the current Contract Works and Construction Liability marketplace to illustrate how it continues to change and we expect further movement prior to an insurance program being placed for this Project: These are summarised as below:

- 2020 has seen the continuation of a hardening Contract Works market with rate increases sitting between 10%-30% for clean risks and 50%-200% for poor performing renewal accounts.
- Present COVID-19 issue has also created a degree of uncertainty around losses and presents a challenge in estimating any potential future impact on the insurance industry arising from COVID-19.

- Ultimate loss in this sector is not known until a project overruns it's scheduled completion date.
- Current market conditions mean there are restrictions in cover, particularly regarding defects, sub-limits and other extensions are under scrutiny. Excesses are also increasing, particularly for larger projects where minimum deductibles will apply.
- Insurers appetite for certain disciplines has decreased. Large civil, pipeline and utility projects are becoming increasingly harder to place.
- A number of insurers continue to raise concerns and we would not be surprised if more capacity withdrew from the Australian market.
- Claims for injury to subcontractors (Worker to Worker) and damage to third party services continue to occur frequently resulting in push for increases in deductibles on Worker to Worker and Water Damage Claims.

We will continue to provide market updates to TransGrid for construction insurances as the Project progresses.

Other factor that may influence the cost of insurance are:

- Contractor performance in delivery of recent project and claims activity
- Construction scheduling and contingency built in, for example, is it a compressed schedule?
- Construction methodology
- NAT CAT exposures



#### **Summary of Premium Estimates**

#### Construction Phase – total estimated cost for the entire project

Class of Insurance	Policy Coverage	Rating Variable	Deductible	Premium (incl c	harges excl GST)		
Olass of insurance	Tolley dovelage	reading variable	Amount	Methodology for determining insured amount	Deddelible	High	Low
l							
			■		_	_	_
					=		
			•		_	-	•
						-	=
						-	-
Total						\$8,712,006	\$6,350,818

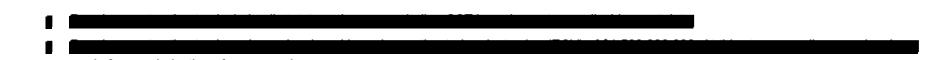


Construction Phase - separate estimates for each regulatory year, provided for TransGrid's financial modelling purposes only.

Class of Insurance	Total Estimated Premium (incl statutory charges excl GST)					
	High	Low				
		_				
Total	\$8,712,006	\$6,350,818				

202	0-21	2021-	-2022	2022-23		
High	Low	High	Low	High	Low	
			-			





## 4. Identifying and linking project risk to insurable risk

A key to identifying risks associated with the Project is undertake an insurable risk profiling process which will assist in developing a more detailed understanding of insurable project risks and creating tailored insurance solutions that are 'fit for purpose'.

Based on our understanding of the project, major risk exposures faced by TransGrid with respect to the financing, design and construction of the Project, arise from four broad areas. These are:

- risks of loss, damage and destruction of property (including during Early Works, and reliance on offshore manufacturing and transits)
- risks of financial loss associated with the delay in completion by the date of operational readiness (including reliance upon the timely completion of affiliated Projects);
- 3) risks assumed under contract; and
- potential liabilities to third parties incurred as a result of breach of statute or common law.

Aon understands that TransGrid is in the process of completing a broader project risk assessment which will cover risks across all relevant categories. Aon's proposed Insurable Risk Profiling exercise will look to capitalise on this work and provide a deep dive into the insurable risks attached to the project. Outcomes can be linked back into the project risk work and can be dovetailed into risk action planning.

The proposed insurable risk profiling exercise will also provide TransGrid with a linkage between project risk and insurance by providing a comprehensive understanding of:

- ✓ The significant risks of the project;
- ✓ Setting Maximum Foreseeable Loss (MFL) Limits (Both for Material Damage and Liability)
- ✓ Which risks are insurable;
- ✓ The options and availability of insurance cover;
- Insurance limits and sub-limits (workshop to determine adequacy);
- ✓ The risk tolerance and appetite of project participants; and
- ✓ The commercial availability of the specified insurance regime

This process is commonly adopted by our clients across a broad variety of infrastructure and commercial projects and we believe will also assist TransGrid in optimising the total costs of insurable risks for this Project as TransGrid will be able to better 'sell the risk profile and its mitigation' to insurance markets.

#### **Insurable Risk Profiling Scope and Deliverables**

The following describes Aon's 4 stage insurable risk profiling process





#### **Source Data**

Obtaining and reviewing existing project risk registers and other risk data reviewing major contractual obligations understanding TransGrid's risk appetite

#### **Develop Insurable Risk Profile**

This stage will assist in:

- capturing of events and their consequences on a qualitative level to help with setting and validating the scope of insurance cover
- developing quantitative models to establish Maximum Foreseeable Loss (MFL) values and;
- combining the outputs of risk analysis reports with Aon's risk library

#### **Insurance Gap Analysis**

At this stage, Aon will undertake:

- quantitative risk assessment what happens in a 'worst case' scenario?
- Rank the significant risks in terms of severity? What is the financial impact of the risk materialising?
- determine the maximum foreseeable loss (MFL) for those scenarios

#### **Develop Optimum Program**

The outputs of the insurable risk profile exercise will then be utilised in developing a tailored insurance solution that are 'fit for purpose'.

#### **Insurance Risk Analysis**

The major insurable exposures faced by TransGrid and its contractors arise from a number of major identifiable areas:

- First party risks associated with the construction or business risks of the project;
- Risks assumed under contract;
- Liability to third parties incurred under statute or common law;

These risk areas are not mutually exclusive and can in the main be treated by tailored insurance policies.



The risk profile tables below provides a summary of some of the more significant exposures identified in our review, listed under three categories

- Protection of Assets:
- Protection of Income:
- Legal Liability to Third Parties;

It should be understood that insurance is not the "panacea to all ills". TransGrid may be exposed to a number of residual risks associated with the Project – exchange rate variation, for instance, being one area where insurance has traditionally not responded. Furthermore, the existence of policy exclusions and conditions means that insurance will not respond to all losses within the broad categories.

The insurable risk profile tables in respect of the project have been completed based on the coverage that is provided by the proposed insurance policies.

We recommend that an Insurable Risk Profiling and gap analysis exercise is undertaken in order to ensure that the proposed program, its limit, coverage and excesses are appropriate.



#### Major Risk Profile - Construction Phase

Please find below a brief analysis based of the Insurable and Uninsurable Risk in relation to this Project based on the coverage(s), as summarized earlier in this Report.

#### Property Loss, Damage and Destruction

Risk Ex	xposure/Event	Insurance Available?	Applicable Insurance	Insurance effected? <sup>2</sup>	Comments
Physica	al loss of, damage to, or destruction of:				
1.	Property for and forming the Project Works	Yes	CW	Yes	CW = Contract Works insurance.
2.	Contractors' plant and equipment	Yes	CW/ CPE	No	CPE = Contractors Plant & Equipment. Further review of ley P+E and impact of damage to project delay tbc as part of IRP workshop
Occurri	ng:				
3.	At the Works Site	Yes	CW	Yes	
4.	Elsewhere within Australia, including whilst in transit, in storage and offsite for fabrication	Yes	CW	Yes	
5.	Within Australia at original manufacturers' or suppliers' premises	Yes	cw	Yes	To the extent that title to the property has passed to a party insured under the Contractor's insurance, or an insured party has otherwise assumed risk for the property
6.	Outside of Australia - whilst being shipped to Australia, in storage incidental to shipping	Yes	Marine	Yes	Marine Cargo Insurance



<sup>&</sup>lt;sup>2</sup> Insurance affected? – means, if "Yes", that if insurance is effected in accordance with the details provided in this Report.

Risk Ex	posure/Event	Insurance Available?	Applicable Insurance	Insurance effected? <sup>2</sup>	Comments
7.	Outside of Australia – whilst at original manufacturers' or suppliers' premises	Yes	Marine	Yes	Under the terms of the Marine Cargo Insurance, cover automatically attaches at the time and place that the risk of loss and damage passes from the manufacturer, or supplier, to the Principal, or to the Contractor.
Caused	l by:				
8.	Rebellion, revolution, insurrection commotion and military usurped power, act of sabotage or act of a public enemy and war (declared or undeclared) or other like hostilities	No			Note, however, that to the extent that loss or damage caused by a public enemy constitutes an act of terrorism and is declared as being such by the responsible Minister under the terms of the Terrorism Insurance Act, by virtue of this Act, cover will be provided.
9.	lonising radiation, contamination by radioactivity, nuclear, chemical or biological contamination	No			
10.	Natural perils - fire, bushfire, lightning, flood, cyclone, water damage, other weather events, earthquake/seismic activity, tsunami, volcanic eruption	Yes	cw	Yes	
11.	Fire (non-natural), explosion, implosion, impact by aircraft/aerial devices, impact by vehicles, smoke	Yes	CW	Yes	
12.	Subsidence / Landslide	Yes	CW	Yes	
13.	Malicious damage, riots, strikes and civil commotion, workers' lockout or ban or other industrial dispute	Yes	CW	Yes	Insurance only responds to the extent there is physical damage caused by these events.
14.	Defective design, specification, materials or workmanship	Yes	CW /PI	Yes	There is limited cover under CW. See the explanation of the LEG 3 form of defective design, etc. This may fall to the party responsible for design works.



Risk Ex	kposure/Event	Insurance Available?	Applicable Insurance	Insurance effected? <sup>2</sup>	Comments
15.	Terrorism	Yes	CW	Yes	The CW insurance will be an "eligible policy of insurance" as this term applies under the Terrorism Insurance Act (C'wth). This means that in the event of an act of terrorism that is declared to be such by the responsible Minister, in accordance with the terms of the TIA, any exclusion to, or limitation of, cover for acts of terrorism under an "eligible policy of insurance" is rendered legally void and unenforceable. Therefore, if the act of terrorism causes physical damage to property that is insured by the "eligible policy of insurance", the insurer(s) must indemnify the insured for its loss, subject only to the general deductible and total limit of indemnity applying under the policy.
16.	Theft of Property	Yes	CW /CPE	Yes	Excludes theft of money and any loss resulting from infidelity of employees.
17.	Loss of money and/or property from misappropriation or infidelity of directors, employees or agents	Yes	FG	No	FG = Fidelity Guarantee or Comprehensive Crime insurance has not been requested for this project
18.	Machinery breakdown / electronic data processing / electronic equipment breakdown / explosion, implosion and collapse of boilers and pressure vessels	Yes	CW / CPE	Yes	Cover is provided subject to the defective design, etc., limitation (see item 14 above), includes cover for machinery, etc., undergoing testing and commissioning.
19.	Accidental damage	Yes	cw	Yes	Any other form of accidental physical loss or damage is covered subject to the exclusions and limitations referred to in items 8, 9 and 14 preceding.



Risk E	xposure/Event	Insurance Available?	Applicable Insurance	Insurance effected? <sup>2</sup>	Comments
20.	Perils of transit by sea, air, road or rail relative to Works property being shipped from outside of Australia	Yes	Marine	Yes	

#### Protection of Income

Risk Ex	xposure/Event	Insurance Available?	Applicable Insurance	Insurance effected? <sup>3</sup>	Comments
Loss of	revenue consequential upon a delay in completion of the Project and	commencemen	t of the Operation	on & Maintenance	Phase:
1.	Loss causes 10 through 19 of preceding table	Yes	DSU	Yes	DSU = Delay in Start Up (also known as Advanced Business Interruption), provides cover for financial loss consequent upon a delay in completion of the Project as a result of a loss insured by the Contract Works Material damage insurance.
2.	Additional increase in Cost of Working	Yes	DSU	Yes	
3.	Claims Preparation Costs	Yes	DSU	Yes	
4.	Prevention of Access to the Site	Yes	DSU	No	Subject to the prevention of access being resultant on damage to property in the vicinity of the site caused by an event for which cover would have been provided by the Contract Works material damage insurance if it had insured the damaged property.
5.	Customers/suppliers'/manufacturers' premises – e.g. failure of/delay in supply of critical Works equipment, etc.	Yes	DSU	No	Subject to the failure of/delay in supply being resultant on damage to the suppliers'/manufacturers' premises caused by an event for which cover would have been provided by the Contract Works material

<sup>&</sup>lt;sup>3</sup> Insurance effected? – means, if "Yes", that if insurance is effected in accordance with the details in this Report.



Risk Ex	Risk Exposure/Event		Applicable Insurance	Insurance effected?3	Comments
					damage insurance if it had insured the damaged premises.
6.	Utilities failure – loss of supply of electricity, gas, water, sewerage and communications	Yes	DSU	No	
7.	Infectious or contagious disease/epidemic/pandemic	Yes	DSU	No	
8.	Pollution/contamination event – existing or new	Yes	DSU	No	Provides cover if the pollution/contamination event results from a loss that is covered by the Contract Works material damage insurance.
9.	Loss of construction plant and equipment	Yes	DSU	No	The DSU insurance can provide cover for loss consequential upon a delay in the Project reaching Completion due to physical damage to construction plant and equipment, even if the construction plant and equipment is not insured for material damage by the Project Contract Works insurance.
10.	Loss of Works property occurring in the course of transit from overseas	Yes	MDSU	Yes	MDSU = Marine Delay in Start Up insurance.
11.	Confiscation, nationalisation, import/export controls, loss of licence, taxation changes, changes in law	Yes	Political Risks	No	Specialised insurance with limited availability – expensive. Would only become relevant insurance if major parts and equipment were being sourced from a country, or countries, that is/are politically and/or economically unstable.



#### Liability to First and Third Parties

Risk Ex	rposure/Event	Insurance Available?	Applicable Insurance	Insurance effected? <sup>4</sup>	Comments
Liability	to first and third parties for damage their property injury (including de	ath) to their per	son and their pu	ure, or consequent	ial, financial loss:
1.	Property damage	Yes	PL.	Yes	PL = PAI Liability insurance
2.	Financial loss consequent upon property damage	Yes	PL.	Yes	
3.	Personal and bodily injury, including death and illness.	Yes	PL	Yes	
4.	Financial loss consequent upon personal and bodily injury, including death and illness	Yes	PL.	Yes	
5.	Financial loss not consequent upon property damage, nor upon personal and bodily injury including death and illness. This risk exposure relates to the Principal being liable for pure financial loss suffered by a third party or as a consequence of the Contractors negligence which typically results from an error or omission in the provision of a service, particularly a professional service, or from a good supplied failing to meet the level of specification and/or performance that it was contracted to meet and/or provide.	Yes	PI	Yes	PI = Professional Indemnity insurance provided by the Contractors and Sub contractors
6.	Bodily injury arising out of the use of registered vehicles	Yes	СТР	Yes	CTP = Compulsory Third Party (bodily injury) insurance. This Insurance is managed by TransGrid directly.
7.	Property damage arising out of the use of registered motor vehicles	Yes	TPPD	Yes	TPPD = Motor Vehicle Third Party Property Damage.
8.	Bodily injury and property damage arising out of the use of unregistered motor vehicles and mobile plant and registered motor vehicles whilst being used off road	Yes	PL	Yes	
9.	Loss suffered as a result of an act, error or omission in the rendering of a professional service	Yes	PI	Yes	PI = Professional Indemnity insurance provided by the Contractors and Sub contractors

<sup>&</sup>lt;sup>4</sup> Insurance effected? – means, if "Yes", that if insurance is effected in accordance with the details in this Report



Risk Exposure/Event		Insurance Available?	Applicable Insurance	Insurance effected? <sup>4</sup>	Comments			
10.	Environmental Impairment – sudden and accidental pollution	Yes	PL	Yes				
11.	Environmental Impairment – Gradual	Yes	EIL	No	Specialised insurance with limited availability. Whilst we note that TransGrid has an operational Contractors Pollution Liability program in place, no request has been made to provide coverage for this project.			

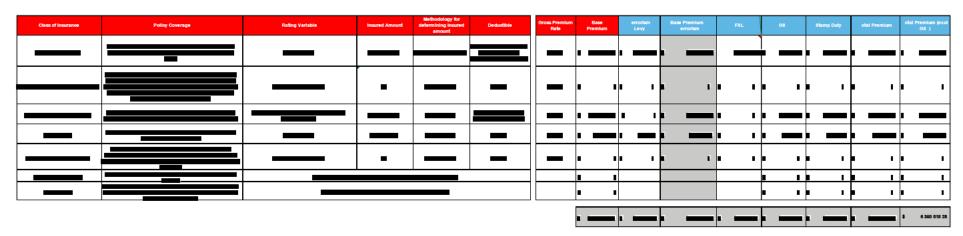


## 5. Appendices

#### **Construction Phase (high)**

Class of Insurance	Polloy Coverage	Rating Variable	Insured Amount	Methodology for determining incured amount	Deducâble	Gross Premium Rate	Bace Premium	erroriam Levy	Base Premium errorism	F8L	G8	Stamp Duty	otal Premium	otal Premium (exol G8 )
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#### **Construction Phase (low)**



#### Note:

Fire Service levy applied assuming 50% of risk in NSW

#### **Source of Information**

Aon's findings and analysis are based upon information provided by TransGrid. In particular, the draft program outline is based on the following key documents:

Subject matter and Document Name	Document Type
Scope and Design – Attachment 1.7 – SDM – Automation Rev 2.00	PDF
Scope and Design – Attachment 1.7 – SDM – Civil and Structures Rev 1.04	PDF
Scope and Design – Attachment 1.7 – SDM – Condition Monitoring Rev 1.01	PDF
Scope and Design – Attachment 1.7 – SDM –Control Rev 2.00	PDF
Scope and Design – Attachment 1.7 – SDM – Protection and Metering Rev 3.00	PDF
Scope and Design – Attachment 1.7 – SDM – Communications Rev 2.00	PDF
Scope and Design – Attachment 1.7 – SDM – Primary Design Rev 2.00	PDF
Scope and Design – PEC Part 1 Section 1 Technical Specifications Rev5	Word
Scope and Design – TL Steel Pole Specification – Rev_0.2	PDF
Scope and Design – TL Tower Specification – Rev_0.2	PDF
Scope and Design – Transmission Line Design Manual – rev 1.0-	PDF
Construction and Methodology – PEC- PIP Final Gold	PDF
Construction Schedule – 20191014 Project EnergyConnect – PEC- RFTA Programme Rev1	PDF
01.03 DRAFT Term Sheet (for mark up) (5)	Word
PEC_EPC FIA and General Conditions (506764040.8)	Word
PEC - PIP Final Gold	



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