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CSSI 18_9471 – Port Kembla Gas Terminal

Dear Rose-Anne,

Thank you for the opportunity to provide a summary of some of the key points outlined in our EIS, Technical Paper and Response to Submissions in relation to the consideration that has been given to the potential risk to the PKGT from coastal hazards due to climate change impacts.

The risk assessment for EIS purposes was conducted in accordance with *Australian Standard 5334-2013 Climate change adaptation for settlements and infrastructure – A risk based approach*.

The assessment utilised a variety of available climate data sources, including various data sets from OEH, to look at the potential hazard events, then the asset vulnerability to those events and potential mitigation.

The overall conclusion of the assessment was that the risks posed to the project from coastal hazards as a result of climate change impacts is low to moderate. These are tolerable levels of risk where adaptation is not typically required, after consideration is taken into account of the nature of the exposed infrastructure.

Potential Events & Adaptation

Utilising the available climate data, various scenarios were considered out to 2030 and 2050, and a risk analysis conducted which involved estimating the likelihood and consequences associated with each of the described risks.

The risk matrix used for this assessment, including the descriptions of consequences and likelihood, come from AS 5334. The risk assessment was also separately reviewed by a Principal Maritime Engineer who has previously designed berth facilities within Port Kembla Inner Harbour.

In total 11 different climate change risks were considered and assessed. There were no high or extreme risks identified using the Australian Standard, even out to 2050.

Current risk ratings resulted in low risk ratings for all 11 events, with the exception of a current Moderate rating for extreme wind events.

The three most probable risks identified overall, especially considering 2030 and 2050 scenarios were:

- Sea Level Rises
- East coast lows
- Extreme wind events

Looking at 2030 and 2050 scenarios, sea level rises and east coast lows moved into a moderate risk level, before any design and/or adaptations were considered.

It should be noted this is approximately 10 years from now, providing plenty of time to work with the Port asset manager and others to address emerging risks should climate change predictions and/or impacts begin to exceed the current assessment levels.

Nevertheless, initial design, as well as many in-built characteristics of the project provide effective mitigations for all three events. These are described in further detail below.

Risk to lives, infrastructure and environment

The bulk of PKGT infrastructure is located on a maritime vessel built to withstand extreme open ocean conditions. The majority of our on-site employees will also be located on the vessel, where the bulk of operations occur and where a minimum marine ticketed crew is required to be maintained at all times.

This ensures the vessel can put to sea quickly if required, including in response to worsening coastal conditions.

The berth to which the FSRU will be moored is located in the inner harbour of Port Kembla, not in the outer harbour and thus has a greater degree of natural protection. The berth itself is on the western side of the promontory, to the side of the port entrance known as 'the cut'.

The sea-side road and wall running adjacent to the PKCT and PKGT premises is maintained by the port asset manager, NSW Ports, and is armoured to withstand coastal storms and other hazards.

On-shore infrastructure at the PKGT is largely limited to mooring systems/mooring dolphins, marine offloading arms (2) to tie-in to the pipeline, fire/safety and range of ancillary facilities like an access road, fencing and other security, lighting, underground utilities, including the gas pipeline.

The gas pipeline is built to Australian Standard 2885 which governs the safety, maintenance and operation of all high-pressure gas networks around Australia.

The marine offloading arms all have extensive safety, quick release and durability features but they are also fairly modular / standard and so can be replaced should an event take them out of action. This is also logically true of the other surface infrastructures such as security fencing etc.

Lastly, the current reference design for the wharf includes an allowance of 20 cm to more than compensate for a 14 cm rise in sea levels by 2030. This should be more than sufficient for the maximum current intended life of the project (10 – 15 years).

Conclusion

As a result, the overall risk to the project from coastal hazards resulting from climate change impacts have all been assessed as low to moderate in 2030 and beyond. The adaptation of the wharf design, the resilient and mobile nature of the maritime vessel involved, the limited surface infrastructure and the housing of the project within a inner harbour area as part of a larger port infrastructure owned and managed by NSW Ports, all combine to minimise any residual risk to the project from coastal events as a result of climate change.

Yours Sincerely,



Kylie Hargreaves

Government & Stakeholder Relations