GHD Calls Sea Level Rise "Extreme" — And "Negligible" — In the Same EIA

Analysis based on OCR of TNG-EIA-APP-G Climate Risk Scan (50 pages, GHD Pty Ltd, 16 February 2026, prepared for The Next Generation Fiji).

GHD rates tropical cyclones and sea level rise as EXTREME risks to this facility. In the same EIA submission, GHD's hydrodynamic modelling calls sea level rise impacts on this facility "negligible." The Climate Risk Scan itself admits it is only a qualitative desktop scan — and recommends a comprehensive assessment be done. That comprehensive assessment has not been done. It is not in the EIA.

The Eight Critical Failures

1. GHD Rates Tropical Cyclones as Extreme — The Flood Study Doesn't Model Them At All

The Climate Risk Scan conclusion (Section 7, page 43) is unambiguous:

> *"Of the six climate hazards assessed, tropical cyclones and sea level rise were assessed as extreme and flood was assessed as high for the site under a very high emissions scenario for the 2090 timeframe."*

The document's own risk rating table (Table 17) shows:

Climate Hazard	2090 SSP5-8.5 Rating
Tropical cyclones	**EXTREME**
Flood	**HIGH**
Sea Level Rise / Coastal Erosion	**EXTREME**

This is the climate risk assessment for the project site. Tropical cyclones are an **extreme risk**. Flooding is a **high risk**. Sea level rise is an **extreme risk**.

Now read Appendix H — the Flood Study:

- No cyclone scenario modelled
- No storm surge modelled

- No sea level rise in the rainfall input
- One storm event only: the 100-year rainfall event

Read Appendix K — the Hydrodynamic Modelling:

- No cyclone modelled
- Storm surge "assessed qualitatively" only
- Sea level rise: *"Impact is considered negligible."*

GHD's own risk scan rates the three climate hazards most relevant to this coastal industrial site as extreme or high. GHD's own flood study and hydrodynamic modelling do not model any of them.

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2. GHD Rates Sea Level Rise as "Extreme" — Then Calls It "Negligible" In the Same EIA

This is perhaps the most direct contradiction in the entire EIA.

Appendix G (this document, page 43): Sea level rise is rated **Extreme** for the 2090 timeframe.

Appendix K (Hydrodynamic Modelling, Table 6.2):

> *"Projected sea level rise causing marginal increases in water depths at the wharf and causeway. Impact is considered negligible."*

These two findings cannot both be true. The same consulting firm, GHD, on the same project, in documents submitted to the same regulator in the same EIA package, concludes that sea level rise is simultaneously an extreme risk and a negligible impact.

The Climate Risk Scan also presents quantified sea level rise projections from NASA data (Figure 7): approximately **63.6 cm rise by 2090** under SSP5-8.5 at 50th percentile. The Flood Study already documents baseline flooding of 2.44–2.69 mRL across the site in a 100-year rainfall event. Adding 63.6 cm to those figures — which the Flood Study acknowledges is necessary but never calculates — would render the current flood analysis meaningless.

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3. The Document Is Only a Qualitative Desktop Scan — And Says So Explicitly

Section 1.4 states the limitations:

> *"This climate change risk scan plan presents findings from a high-level desktop qualitative review of climate change risk. It considers physical risk only and was not informed by consultation with key stakeholders."*

"High-level desktop qualitative review." This is a preliminary screening exercise, not a climate risk assessment. It tells the regulator that extreme-rated risks exist. It does not analyse what those risks actually mean for the facility, does not model any climate scenario, does not assess whether the facility design is adequate to withstand these risks, and does not recommend specific design responses.

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4. The Document's Own Conclusion Is That a Comprehensive Assessment Must Be Done — It Has Not Been Done

The conclusion (Section 7) ends with:

> *"It is recommended that a comprehensive climate risk assessment be undertaken during the design phase of the project to ensure that all potential hazards are thoroughly evaluated and appropriate mitigation actions are incorporated."*

> *"The completion of a more detailed climate risk assessment and adaptation strategy in accordance with AS 5334-2013 Climate Change Adaptation for Settlements and Infrastructure would identify specific climate change risks, control measures and adaptation responses for the project."*

The qualitative scan itself recommends that a comprehensive assessment be done. That comprehensive assessment has not been done. It is not in the EIA. No AS 5334-2013 climate risk assessment exists for this project.

GHD is telling the regulator, in the document submitted to the regulator: the real climate risk work still needs to happen.

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5. No Climate Risk to Ash, Waste Storage, or Incinerator Operations Is Assessed

The Climate Risk Scan identifies how climate hazards will affect the physical infrastructure of the facility — roads, buildings, power supply, workers. At no point does it assess:

- What happens to ash storage when a Category 4 cyclone strikes the facility
- What happens to hazardous fly ash stockpiles during a compound storm surge and rainfall event

- How increased rainfall frequency and intensity (projected by this very document) affects ash leachate contamination of the adjacent marine environment
- Whether the ash export plan (Appendix M) remains viable if the port is periodically inoperative due to cyclone damage

Table 8 documents a 32.5% increase in extreme precipitation events by 2090. The Flood Study confirms ash stockpiles flood to over 1 metre in the current 100-year event. The Climate Risk Scan confirms that storm events will become more extreme and more frequent. No document in the EIA connects these facts.

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6. The Facility's 25–30 Year Operating Life Is Assessed Against Only Two Time Snapshots

The Climate Risk Scan assesses climate risks for 2030 (range 2020–2039) and 2090 (range 2080–2099). The facility would operate from approximately 2028 to 2055. This means:

- The 2030 snapshot represents the beginning of the facility's operating life
- The 2090 snapshot represents conditions 35 years after the facility is projected to close

There is no assessment of the operating period itself — 2028 to 2055 — as a distinct period. The most relevant window for the facility's actual climate exposure falls squarely between the two assessed snapshots. The document does not calculate what happens during those years.

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7. The Climate Risk Scan Does Not Account for Compound Events

The Climate Risk Scan assesses each hazard separately: cyclones, flooding, sea level rise, drought, temperature, bushfire. It does not assess compound events — simultaneous occurrence of multiple hazards.

Yet the actual existential risk to this facility is not a cyclone alone, or sea level rise alone, or extreme rainfall alone. It is all three simultaneously, plus storm surge. A Category 4 cyclone making landfall at Vuda Point during a high astronomical tide would produce:

- Extreme rainfall (assessed as "high" risk individually)
- Storm surge of 2–4 metres above mean sea level
- Ocean wave heights far exceeding normal coastal conditions
- All on top of a baseline sea level that is already rising

The Hydrodynamic Modelling acknowledges storm surge at Lautoka can reach 1.67 metres. The Climate Risk Scan rates cyclones as "extreme." The Flood Study models a 100-year rainfall event in isolation. No document assesses what happens when all of these occur simultaneously

— the actual scenario that would threaten a coastal ash storage facility.

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8. Extreme Rainfall Frequency Projections Directly Contradict the Flood Study's Inputs

Table 8 of this document projects that extreme precipitation events will increase by 32.5% by 2090 under SSP5-8.5. The document also notes:

> *"Extreme daily rainfall events in Fiji are expected to increase in both frequency and intensity. It is estimated that the current 1 in 20-year daily rainfall events will become more frequent under all future global emissions scenarios. By 2090, these events are anticipated to happen on average every 1 in 9 years under a very low emissions scenario, and as often as once every 4 years under a very high emissions scenario."*

The Flood Study (Appendix H) used a rainfall input of 588 mm described as being *"without the consideration of future climate change allowances."* It explicitly excluded climate change from its rainfall depth.

If the 100-year rainfall event becomes the 20-year or 4-year event by 2090, the facility's flood design — already inadequate because it excludes sea level rise, cyclones, and storm surge — becomes catastrophically inadequate before the facility's operating life ends.

The Internal Contradiction Summarised

Issue	Appendix G Climate Risk Scan	Appendix H Flood Study	Appendix K Hydrodynamic Modelling
Tropical cyclone risk	**EXTREME**	Not modelled	Not modelled
Flooding risk	**HIGH**	100-year event only	Not relevant
Sea level rise risk	**EXTREME**	Excluded from inputs	"Negligible"
Assessment type	Qualitative desktop scan	Desktop only, no site visits	Model calibrated 1 month, 1 location
Document status	Draft — must not be relied upon	Draft — must not be relied upon	Draft — must not be relied upon

Three documents. Three drafts. Three different conclusions about the same facility's exposure to the same climate hazards — all submitted to the same regulator as a single EIA.

Summary of Failures

Issue	Status
Cyclone risk rated	**EXTREME — not modelled in Flood Study or Hydrodynamic Modelling**
Sea level rise rated	**EXTREME — called "negligible" in Appendix K**
Flooding rated	HIGH — only 100-year event modelled, no climate change factors
Comprehensive climate risk assessment completed	Not done — "recommended" only
AS 5334-2013 assessment completed	No
Compound event (cyclone + surge + rain) assessed	No — each hazard assessed separately only
Ash storage climate risk assessed	Not mentioned anywhere in the Climate Risk Scan
Extreme rainfall projections incorporated into Flood Study	No — explicitly excluded
Climate projections cover facility operating period (2028–2055)	No — 2030 and 2090 snapshots only
Document status	Draft — must not be relied upon
GHD liability	Disclaimed in full

What Remains to Be Analysed

- **Appendix I — Greenhouse Gas Assessment**: Does it assess the facility's own emissions contribution to the climate scenarios this document models as extreme risks? Is there a circularity — the incinerator worsens the very climate hazards that threaten the incinerator?
- **Appendix Q — Marine Ecology Assessment**: Does it cross-reference Appendix G's extreme cyclone/sea level ratings against potential impacts on the reef and mangroves?

- **Appendix L — Marine Water and Sediment Quality Analytical Summary**: Does it establish a contamination baseline that would allow detection of post-cyclone ash leachate events?

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