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Supplementary groundwater impact assessment addressing changes to project staging

Marinus Link Pty Ltd (MLPL) has proposed to change the timing of Stage 1 and 2 of the Marinus Link project (the project), which is different to the timing which has been assessed in the environmental impact statement (EIS) / environment effects statement (EES) (Marinus Link, 2024). Each stage would deliver one complete 750 MW HVDC circuit between Tasmania and Victoria.

The EIS/EES assumed that the Stage 2 cable would be installed immediately after the Stage 1 cable was completed, and that this would occur between 2025 and 2030, subject to market demand (Marinus Link, 2024). MLPL now proposes a gap between completion of Stage 1 (by 2030) and construction of Stage 2 (between 2031 and 2033).

This letter provides a supplementary assessment of groundwater impacts that should be read in conjunction with the Groundwater Impact Assessment report (Tetra Tech Coffey, 2024a), herein referred to as the GIA report. The GIA report (Tetra Tech Coffey, 2024a) was submitted as Technical Appendix P of the Marinus Link project's EIS/EES (Marinus Link, 2024).

1. SCOPE

The scope of this supplementary report was defined by the *Marinus Link supplementary impact assessment – revised timing of Stage 2* memorandum provided by Tetra Tech Coffey Pty Ltd (Tetra Tech Coffey) on 4 June 2024 (Attachment A).

It requested that this supplementary report should:

1. Identify whether a change to the timing for delivery of the works for Stage 1 and Stage 2 would have any material implications for the assessment or conclusions of the GIA and result in:
    a. any additional impacts
    b. any changes to impacts previously identified
    c. any changes to the conclusions set out in the GIA
2. Identify whether, as a consequence of the changed timing for delivery of Stage 2 and associated works, there are:
    a. any new mitigation measures or Environmental Performance Requirements (EPRs) recommended
    b. any changes to existing mitigation measures and EPRs recommended.

This supplementary report has considered project update #1 titled *Timing of Stage 2* (May 20, 2024) as provided on the MLPL website (https://marinuslink.com.au/eis-ees-updates/).

2. CHANGES TO THE PROJECT DESCRIPTION

The originally proposed timing for the Marinus Link project included two stages with the first to be completed between 2025 and 2030. Stage 2 was intended to commence immediately after Stage 1 in 2030.

Since the submission of the GIA and the EES, MLPL has issued information regarding the revised timing of Stage 2, which indicates that Stage 2 construction will commence in 2031 and is expected to be completed by 2033. This change results in up to a 1 year break between the Stage 1 and Stage 2 construction period and some changes to rehabilitation activities and other temporary works to accommodate this break.

Consistent with the assumptions presented in the GIA (Tetra Tech Coffey, 2024a), all earthworks including trenching, excavation, and horizontal directional drilling (HDD), and major construction activities, including laying of the cable conduits and construction of the cable joint pits, will be completed during Stage 1.

On completion of Stage 1 construction, major construction laydown areas and access tracks will now remain in place through the interim period prior to commencement of Stage 2. The haul road along the alignment will however be removed and the land reinstated and rehabilitated. The major laydown areas would be vacated during the interim period and not used for storage of chemicals and fuels, or equipment containing chemicals or fuels.

Stage 2 works will include the following specific activities that may be relevant to the GIA:

- Accessing and opening joint pits (requires removing soil and storing topsoil to reinstate) to enable cable pulling between joint pits. It is assumed there will be no ground disturbance along the cable route between joint pits.
- Accessing and establishing construction areas either side of conduits (that were constructed by trenchless construction methods in Stage 1) under road, rail, third party assets, vegetation, river crossings and the shore crossing.
- Installing (including below-ground foundations) and commissioning the second converter station.

It is assumed that groundwater dewatering activities will occur during Stage 1 construction activities as previously assessed by the GIA (Tetra Tech Coffey, 2024a). Stage 2 construction will likely require some form of dewatering at those same locations in areas where the existing subsurface infrastructure was installed below the watertable and where that infrastructure was not designed to be watertight. This second phase of dewatering is required to allow for Stage 2 works within the joint pits to be conducted in dry conditions.

3. REVISED GROUNDWATER IMPACT ASSESSMENT

3.1 ADDITIONAL IMPACTS

No new potential impacts have been identified as a result of the changes to project staging.

3.2 CHANGES TO ASSESSED IMPACTS

3.2.1 Groundwater levels

The proposed changes to project staging requires a second phase of groundwater dewatering during Stage 2 construction at joint pit that may be installed below the watertable and are not designed to be watertight.

The GIA assumes one period of dewatering and subsequent groundwater level recovery and considers potential impacts based on a duration of drawdown lasting in the order of several months. The proposed changes to project staging and a second phase of groundwater drawdown might possibly extends the total

duration of groundwater level drawdown (including periods of post construction groundwater level recovery) to be in the order of several years. This increased duration may result in an increased magnitude of potential groundwater level impacts than those presented in the GIA (Tetra Tech Coffey, 2024a), particularly to aquatic and terrestrial GDEs. The method and rate of dewatering required to achieve dry working conditions within joint pits during Stage 2 is not currently defined.

The modelling method adopted by the GIA (Tetra Tech Coffey, 2024a) assumed steady state conditions, which does not consider the duration of groundwater drawdown. This was assessed qualitatively which was considered reasonable for a single dewatering event. With multiple dewatering events, the total duration and change to groundwater levels over time becomes increasingly important when considering impacts to features such as terrestrial GDEs. A revised assessment with an alternative modelling method would be required to quantify groundwater level changes over time and potential impacts to GDEs and other receptors if Stage 2 dewatering rates are likely to affect the groundwater levels surrounding the joint pits.

3.2.2 Groundwater quality

Groundwater quality impacts assessed in the GIA report generally include:

- Mobilisation of existing groundwater contamination;
- Groundwater acidification as a result of dewatering acid sulfate soils; and
- Groundwater contamination from project activities.

Generally, the altered timing of the Stage 2 construction may slightly increase the magnitude of potential groundwater quality impacts as a result of a second phase of groundwater dewatering extending the total duration that groundwater levels may be locally drawn down.

This change increases the potential for existing groundwater contamination (should it exist) to be mobilised towards the project during construction. It also increases the duration of time that potentially acid sulfate soils may be allowed to oxidise should groundwater levels be drawn down.

This would not change the assessed impact significance from those presented in the GIA (Tetra Tech Coffey, 2024a).

4. ENVIRONMENTAL PERFORMANCE REQUIREMENTS AND MITIGATION MEASURES

Based on the review completed, further work is recommended to determine if the existing EPRs are sufficient to manage risks, particularly where they relate to managing groundwater level drawdown impacts to GDEs.

This work would be documented in the relevant expert witness statement submitted to the Planning Panel hearings.

5. CHANGES TO CONCLUSIONS

Based on the review completed, further work is recommended to determine if the conclusions of the GIA (Tetra Tech Coffey, 2024a) and the existing EPRs require further revision to adequately manage risks, particularly where they relate to managing groundwater level drawdown impacts to GDEs.

This work, when completed, will be documented in the relevant expert witness statement submitted to the Planning Panel hearings.

6. REFERENCES

Marinus Link, 2024. Environmental Impact Statement / Environment Effects Statement. May 2024.

Tetra Tech Coffey, 2024a. Groundwater Impact Assessment report. Appendix P – Groundwater. May 2024

Tetra Tech Coffey, 2024b. Marinus Link supplementary impact assessment – revised timing of Stage 2. 4 June 2024.

Regards,

John Sweeney
Principal Hydrogeologist

cc

Appendix A - Marinus Link supplementary impact assessment – revised
Appendix B – Limitations

Please note:

This report must be read in the context of the attached limitations.

APPENDIX A: MARINUS LINK SUPPLEMENTARY IMPACT ASSESSMENT – REVISED

Marinus Link supplementary impact assessment - revised timing of stage 2

1. BACKGROUND

Marinus Link Pty Ltd (MLPL) have proposed a change to the timing of the two stages of the Marinus Link project (the project) that is different to what has been assessed in the EIS/EES. Each stage would deliver one complete 750 MW HVDC circuit between Tasmania and Victoria.

The EIS/EES assumed the stage 2 cable would be installed immediately after the stage 1 cable was completed, and this would occur between 2025 and 2030. [redacted] The EIS/EES and technical reports note that the timing of stage 2 will be subject to market demand.

MLPL recently published on their website an information update regarding the timing of delivery of stage 1 and stage 2. A copy of this information update, titled *Marinus Link Information Update #1 – timing of Stage 2*, is available here: EIS/EES updates Marinus Link. This information is summarised below, but all specialists are requested to read the information provided on the MLPL website.

MLPL is now seeking supplementary impact assessments from technical specialists to consider whether the change in staging timing presents any changes to the impact assessment/s completed to support the EIS/EES.

The purpose of this document is to:

- provide further description of the activities and timeframe associated with the revised timing of stage 2.
- outline the scope of the supplementary assessment required of potential impacts associated with the revised timing.

2. PROJECT DESCRIPTION

The following section provides a summary of the *Information Update #1* provided on the MLPL website, with some further description of the works proposed to be completed in stage 1 and stage 2, and the timing of stage 2.

2.1 PROJECT CONSTRUCTION ACTIVITIES

The type of equipment used, and the nature of the works would be same as those outlined in the Project Description which has informed your technical assessment for the EIS/EES.

2.1.1 Stage 1

Stage 1 will include the works as assessed in the EIS/EES:

- Earthworks and site preparation for:
  - the converter station site to address requirements for both converter stations for stage 1 and stage 2.
  - access tracks and construction laydown areas.
  - all HDD drilling for the shore crossings, road, rail, third party asset, vegetation and river crossings for both stages.
  - trenching works to install conduits and joint pits within the linear easements that will accommodate cables for both stages.
  - sea floor pre-lay grapnel run.
- Laying the cable for stage 1 across Bass Strait and along the land cable route.
- Construction of the stage 1 converter station at Hazelwood, communications building (and transition station, if required).
- Establishing major construction laydown areas and access tracks, which will remain in place through the interim period between stage 1 and stage 2.

Fences will be removed along the construction area after completion of temporary reinstatement following completion of stage 1 and land use would be able to resume. It is anticipated that the haul road along the construction corridor will also be removed at the completion of stage 1[redacted].

Stage 1 works on each property will include temporary reinstatement works. This will include including temporary infrastructure necessary to comply with Property Management Plans and to facilitate efficient use of the land in the interim period prior to stage 2 works.

Stage 1 will be completed when temporary reinstatement works are completed on each property. Rehabilitation works will be done following completion of stage 1 works.

2.1.2 Stage 2

Stage 2 works will include:

- Accessing and opening joint pits (requires removing soil and storing topsoil to reinstate) to enable cable pulling between joint pits. It is assumed there will be no ground disturbance along the cable route between joint pits.
- Accessing and establishing construction areas either side of conduits (that were constructed by trenchless construction methods in stage 1) under road, rail, third party assets, vegetation, river crossings and the shore crossing.
- Delivering cable drums that will be stored at major laydown areas in stage 2, in the same manner as stage 1, then transporting drums to joint pits for installation.
- Preparing the seafloor for stage 2 with a pre-lay grapnel run, then laying the subsea cables in the same manner as stage 1.
- Laying the cable for stage 2 across Bass Strait and along the land cable route.
- Delivering the transformer to the converter station site.
- Installing (including below-ground foundations) and commissioning the second converter station.
- Final reinstatement work following completion of stage 2.

2.2 TIMING

Stage 1 will take place between 2025 and 2030. Consistent with the EIS/EES, properties along the cable alignment will host main construction works for a period of time within that overall 5 year period. The stage 1 circuit will be commissioned by 2030.

Stage 1 works will be completed in 2030 and stage 2 works will commence in 2031.

Stage 2 circuit will be laid and commissioned by 2033.

[redacted]

3. SCOPE OF SUPPLEMENTARY ASSESSMENT

Based on the above, Tetra Tech Coffey (on behalf of MLPL) is now seeking an assessment, supplementary to your technical impact assessment prepared to support the EIS/EES, to consider the changes in project staging.

Your assessment should address the following key questions:

1. Identify whether a change to the timing for delivery of the works for stage 1 and stage 2 in accordance with the MLPL *Information Update #1* and project description information in this document would have any material implications for the assessment or conclusions of your technical assessment report (report) published with the EIS/EES and result in:
    a. any additional impacts to those identified in your report
    b. any changes to impacts identified in your report
    c. any changes to the conclusions set out in your report.
2. Identify whether, as a consequence of the changed timing for delivery of stage 2 and associated works there are:
    a. Any mitigation measures or Environmental Performance Requirements would be recommended in addition to those set out in your report
    b. Any changes to any mitigation measures and Environmental Performance Requirements set out in your Report would be recommended.

Your assessment must be documented in a short report/letter as a supplement to the report that you have already prepared and is published with the EIS/EES. The supplementary report/letter must be concise, document your assumptions and draw on the methods and information already documented in your report for the EIS/EES. If you make any additional assumptions to inform your supplementary report/letter these must be documented in the report/letter.

It is expected that the reports/letters will be quite short. The supplementary report/letter will be published as an information update to the EIS/EES and made available to the public on the Marinus Link website here: EIS/EES updates Marinus Link.

[redacted]

[redacted]

APPENDIX B: LIMITATIONS

IMPORTANT INFORMATION ABOUT YOUR TETRA TECH COFFEY ENVIRONMENTAL REPORT

Introduction

This report has been prepared by Tetra Tech Coffey for you, as Tetra Tech Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice.

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Tetra Tech Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Tetra Tech Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Tetra Tech Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Tetra Tech Coffey should be kept appraised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statues and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Tetra Tech Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Tetra Tech Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Tetra Tech Coffey prepared the report and has familiarity with the site, Tetra Tech Coffey is well placed to provide such assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Tetra Tech Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

This report should be reproduced in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.