COMMENTS ON DRAFT SCOPING REPORT

(Project No: ZA0058322.7774)

Project:	Proposed Eskom Nuclear Power Plant, up to 5,200 MW
DFFE Reference:	2025-10-0003
Applicant:	Eskom Holdings SOC Limited
EAP:	WSP Group Africa (Pty) Ltd
WSP Reference:	ZA0058322.7774
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EXECUTIVE SUMMARY

1. The Thyspunt Alliance (registration number 2012/099422/08) is a coalition of civil society organisations, non-governmental organisations, industry groups, and individual members with a direct mandate to represent the interests of communities and environments affected by the proposed Nuclear-2 Development ("**the Project**"). The Alliance and its members are registered Interested and Affected Parties with geographic proximity to, and material interest in, the outcome of this process, and have engaged formally with every phase of nuclear siting in the Eastern Cape and Western Cape since the original Nuclear-1 process.

2. The Thyspunt Alliance has conducted a comprehensive review of the Draft Scoping Report ("**DSR**") and associated specialist studies. In our view the DSR does not substantially comply with the requirements of Appendix 2 to the Environmental Impact Assessment Regulations 2014, as required by regulation 21(3). The DSR describes the Project too vaguely and too narrowly, fails to adequately identify and characterise potentially significant impacts, fails to assess reasonable and feasible alternatives on an objective basis, fails to motivate need and desirability in a manner that enables informed decision-making, and produces a Plan of Study that does not provide a sufficient basis for the EIA phase. These failures are not individually correctable through minor revision — they are systemic, and they reflect a process that has conflated the scoping and EIA phases in a manner that has impaired meaningful public participation and predetermined outcomes that should only follow from independent assessment. For this reason, we submit that the DSR must be substantially revised and then the revised DSR must be advertised and subjected to a public participation process before the Scoping Report is finalized and submitted to the competent authority for approval.

3. Our main findings regarding the deficiencies in the DSR are summarised below. Unless the defects identified in these comments are rectified in the Scoping Report, the Thyspunt Alliance will make submissions to the competent authority motivating for it to refuse to approve the Scoping Report.

4. **Finding 1: Inadequate project description and unlawful project splitting**. Instead of describing a construction project for a nuclear power plant ("**NPP**") with sufficient particularity to enable a proper assessment of the potential environmental and socio-economic impacts of the project and its alternatives, the DSR describes a "Plant Parameter Envelope" spanning vastly different technologies. Such an envelope can be used to identify potentially viable sites but is wholly inadequate and inappropriate as a project description for EIA purposes. The project description also excludes the permanent transmission network of up to 1,400 km of high-voltage lines — the single largest land and

ecological footprint of the development — on the basis that it is a "separate" process, while simultaneously using transmission feasibility as a decisive factor in preferring Thyspunt over Bantamsklip. This renders cumulative impact assessment under NEMA section 2(4)(vii) impossible and makes the alternatives comparison structurally biased. (See *Project and Activity Description* section, and Appendix 11 below.)

5. **Finding 2: Predetermination and conflation of process.** The DSR assigns pre- and post-mitigation significance ratings, expresses comparative site preferences, and recommends that Bantamsklip be scoped out — all of which are EIA-phase functions performed during scoping. Pre-application meeting minutes attached by WSP as Appendix J confirm that IRP timeline pressures and Eskom's licensing readiness were material factors in advancing Thyspunt before environmental assessment was complete. This violates the requirement in Appendix 2 section 1 of the EIA Regulations that scoping identify and confirm alternatives through an objective ranking process, and constitutes a risk of predetermined outcome that DFFE's own officials acknowledged in the pre-application meeting. (See *Form of DSR* section below).
6. **Finding 3: Inadequate identification of alternatives.** Renewable energy is excluded as an alternative on the basis that it cannot provide firm baseload — a characterisation that does not reflect current battery energy storage technology and that has not been tested through independent specialist assessment. No levelised cost of energy comparison, tariff impact analysis, or jobs comparison has been conducted. If this is not corrected, the competent authority will not be provided with the information required to determine the best practicable environmental option, and would mean that the decision-makers are not informed that procuring electricity from renewable energy is much cheaper, faster and safer than procuring it from a new NPP. Cooling tower configurations are presented as alternatives when they are merely engineering mitigations within a predetermined coastal development model. The absence of a fatal flaw is repeatedly conflated with environmental preferability, which is an incorrect application of the NEMA framework (See *Alternatives* section and Appendix 11).
7. **Finding 4: Need and desirability.** The exclusion of renewable energy and the absence of provision for comparing the relative merits of generating electricity from a new NPP as opposed to from renewable energy (e.g. specialists studies to assess issues such as levelised cost of energy comparison, tariff impact analysis, and jobs comparison) mean that the need for, and desirability of the Project have not been properly evaluated. If this information is included, it is highly probable that it will indicate that the Project is neither needed nor desirable. (See *Need and desirability* section.)

8. **Finding 5: Legal and policy framework.** The failure to identify that sections 12 and 63 and of the National Environmental Management: Integrated Coastal Management Act are relevant to this scoping and environmental impact assessment ("S&EIA") will render the Scoping Report and any EIA based on it, defective. (See *Legal and Policy Framework* section.)
9. **Finding 6: Site Safety Report withheld and NNR viability unresolved** The Site Safety Report prepared by Eskom in 2025 was used selectively by WSP's specialists but withheld from Interested and Affected Parties throughout the public comment period. I&APs were required to comment on conclusions derived from a document they were not permitted to review. Simultaneously, the National Nuclear Regulator has not issued a positive site viability determination for Thyspunt — the 2016 NISL application was resubmitted in 2026 and remains under review. Proceeding with a large-scale EIA before fundamental nuclear site viability is confirmed by the competent nuclear safety authority repeats the governance failure of the Nuclear-1 process and creates material risk of fruitless and wasteful expenditure. (See *Form of DSR and Flawed Public Participation* sections and Appendix 5.)
10. **Finding 7: Plan of Study is insufficient to support a lawful EIA phase** The Plan of Study does not incorporate the discipline-specific investigation demands documented in Appendices 1 through 10 of this submission — demands that flow directly from WSP's own specialist studies having explicitly deferred critical investigations to the EIA phase. The cumulative impact assessment is not defined by geographic scope, time horizon, or methodology. The need and desirability assessment does not provide for the specialist studies required to enable a lawful determination of the best practicable environmental option. (See *Plan of Study* section.)

INTRODUCTION

1. The Thyspunt Alliance hereby submits the following comments and objections on the Draft Scoping Report ("**DSR**") and associated specialist studies prepared as part of the proposed Nuclear Power Station Scoping and Environmental Impact Reporting ("**S&EIR**") process for the Thyspunt and Bantamsklip sites. The Thyspunt Alliance is a collaborative alliance of civil society organisations, non-governmental organisations (NGOs), industry groups, and individual members.

2. This submission must be read with the separate submissions made by Thyspunt Alliance experts and all other submissions, comments, objections, and supporting documents submitted by members of the Thyspunt Alliance during the public participation process. Many of the concerns raised are interconnected and collectively demonstrate significant environmental, social, procedural, governance, infrastructure, safety, and cumulative impact concerns associated with the proposed development. To avoid unnecessary duplication, the Thyspunt Alliance hereby incorporates such submissions by reference insofar as they are relevant to the assessment and decision-making process.

3. These comments are submitted without prejudice to any and all rights, remedies, objections, appeals, review proceedings, or further legal actions available to the Thyspunt Alliance and affected and interested parties in terms of the Constitution of the Republic of South Africa, the National Environmental Management Act 107 of 1998 ("**NEMA**"), the Promotion of Administrative Justice Act 3 of 2000 ("**PAJA**"), and any other applicable legislation.

4. Participation in this public participation process and the submission of comments must not be construed as acceptance of the adequacy, legality, procedural fairness, scientific integrity, or substantive lawfulness of the DSR, the associated specialist studies, the site selection methodology, or the broader S&EIR process.

5. The DSR includes far more information than is necessary for a scoping phase, and, as detailed below, the format has made it difficult for the Thyspunt Alliance and other interested and affected parties ("**I&APs**") to comment on the DSR. Our approach has been to focus our comments on the issues relevant to the current scoping phase of the project. Although we have included some comments that are relevant to the EIA phase (e.g. on the draft specialist studies), we will comment in more detail on those aspects when commenting on the draft EIA report.

6. The Thyspunt Alliance expressly reserves the right to supplement, amend, expand or refine these submissions should additional information, specialist inputs, supporting documentation, underlying assumptions or previously undisclosed reports become available during any subsequent phase of the process, including but not limited to the Environmental Impact Reporting (EIA) phase, appeals, or judicial review proceedings.

7. The failure to raise a specific issue at this stage must not be interpreted as a waiver of any rights or as limiting the scope of any future legal or administrative challenge.

OVERVIEW OF COMMENTS

8. This document:

   8.1. addresses our concerns with the form and content of the DSR and the difficulties that have arisen as a consequence of environmental impact assessment practitioners ("**EAPs**") partially conflating the scoping and EIA phases of the process (section 4);

   8.2. focusses on commenting on the issues relevant to the current scoping phase of the project; including; the description of the project and activities (section 4), the extent to which the issues and impacts to be considered have been adequately identified (section 5), the identification of alternatives for consideration (section 6), the consideration of the no-go alternative (section 7), the consideration of need and desirability in relation to the Project (section 8) the description of the relevant legal and policy framework (section 9), the adequacy of the existing and proposed specialist studies (section 10), the adequacy of the plan of study (section 11) and the public participation process (section 12); and

   8.3. includes a number of annexes that make detailed comments in relation to specific aspects of the DSR and specialist studies (some of which are primarily relevant to the EIA phase and may be repeated and/or expanded upon when we comment on the draft EIA Report).

9. We have carefully reviewed the DSR and the associated specialist scoping studies, previous Nuclear-1 EIA documentation and a range of relevant scientific and technical publications relating to the Thyspunt site and surrounding environment.

10. Following this review, we have identified a number of significant issues, omissions, discrepancies, uncertainties, and unresolved scientific questions that, in our view, require detailed investigation during the Environmental

Impact Assessment ("**EIA**") phase before any lawful or rational decision-making can occur.

11. Our review indicates that many critical matters have either:

- not been adequately scoped;
- not been sufficiently characterised;
- not been supported by baseline scientific data;
- been deferred to future phases without clear investigation methodologies; or
- been presented in a manner that appears to rely on engineering mitigation rather than genuine alternatives assessment.

12. Importantly, many of these concerns arise not only from the current Draft Scoping Report itself but also from inconsistencies between the current scoping process and findings contained in previous specialist studies and Environmental Impact Assessment documentation contained in the final Environmental Impact Assessment Report for the application for environmental authorisation of the Nuclear-1 project ("**Nuclear-1 FEIAR**").

PROJECT AND ACTIVITY DESCRIPTION

Project is inadequately described

13. The project must be described with sufficient particularity to enable a proper assessment of its environmental and socio-economic impacts. This means that the project description should have specified the type of nuclear reactor to be constructed, with or without specific design alternatives. Instead, the DSR envisages the evaluation and assessment of a vaguely described, notional category of nuclear reactors (the "**Plant Parameter Envelope**") which includes very different technologies and does not describe what is proposed to be constructed with sufficient specificity to enable a proper EIA to be conducted.

14. The absence of an adequate project description is apparent from the fact that the DSR indicates that the proposed NPP:

14.1. will be designed to generate: "Up to 5200 MW (subject to finalisation based on generation capacity scenario selection)";

14.2. will have a design life of 60 years with possibility to extend to 80 years; and

14.3. will use unspecified technology involving "multiple units of large conventional Pressurised Water Reactors (PWR) or Small Modular

Reactors (SMR) of either PWR or High Temperature Gas Reactors (HTGR) or a mixture thereof (i.e. both conventional and Small modular reactors on the same site)."

15. This "Plant Parameter Envelope" will apparently be defined by using parameters from multiple reactor technologies and provide an assessment of the likely effects of a new nuclear project in order to. provide Eskom with the flexibility to determine at a later stage what kind of NPP it will build. regarding future new nuclear deployment.

16. The "Plant Parameter Envelope" does not describe a specific project and defeats the purpose of conducting a S&EIA in order to determine the likely impacts of a specific project at a specific place. The Scoping Report must replace the Plant Parameter Envelope with a specific and detailed description of an actual construction project.

Exclusion of elements of Project

17. The DSR describes the Project being assessed too narrowly by artificially excluding critical supporting infrastructure which will have to be constructed for the purposes of the Nuclear-2 Project. This includes: new and upgraded access roads, transmission corridors and powerlines, construction villages, bulk water supply infrastructure, spoil disposal facilities, marine infrastructure, and associated service networks. These must be scoped, assessed and publicly evaluated as part of the same integrated EIA process.

18. The objection submitted by Donald McGillivray (Energy Specialist for the Thyspunt Alliance) is particularly instructive in this regard (see Annex 11), and is incorporated by reference into this objection. For example, McGillivray points out that the EAP (WSP) has drawn the boundary of the assessment at the on-site high-voltage yard, and in so doing has excised from environmental assessment three activities that are functionally inseparable from the power station:

    18.1. the permanent transmission network of up to 1,400 km of 400 kV and 765 kV lines required to evacuate the plant's output;

    18.2. the power supply and temporary electrical infrastructure required to construct the plant over some fifteen years; and

    18.3. a genuine, quantified assessment of energy alternatives.

19. McGillivray points out that:

    19.1.1. an assessment of the impacts of the permanent transmission network (up-to-1,400 km of 400/765 kV evacuation lines) which amounts to the single largest land and ecological footprint of the

whole development would be excluded from the EIA on the basis that it is notionally a "separate" process;

19.1.2. The energy-alternatives comparison is structurally biased because the DSR proposes excluding nuclear's enormous transmission burden from assessment, while dismissing renewable energy as an alternative on the basis that it lacks a "discrete footprint"; and

19.1.3. by excluding assessment of connected and enabling activities the DSR makes it impossible to assess the cumulative impact of the proposed development which NEMA requires.

20. Such an approach undermines the objectives of integrated environmental management under Department of Forestry, Fisheries and the Environment EIA Regulations and is inconsistent with the principles of cumulative impact assessment, transparency, informed decision-making and meaningful public participation under NEMA.

21. The unlawful exclusion of essential elements of a single integrated industrial development from the project description in the DSR means that:

21.1. the EIA phase will not assess the full range of impacts and risks and how they might be mitigated;

21.2. the environmental, social, economic, traffic, safety, ecological and cumulative impacts of the overall project will be systematically understated and assessed in isolation rather than as interconnected components of a unified development footprint; and

21.3. will result in impermissible incremental decision-making.

FORM OF DSR

22. Appendix 2 to the 2014 Environmental Impact Assessment Regulations **("EIA Regulations, 2014**") states that a scoping process is a consultative process that is undertaken to achieve a number of objects, including:

22.1. to identify the relevant policies and legislation relevant to the activity;

22.2. to motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;

22.3. to identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks;

22.4. to identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification of cumulative impacts and a ranking process

of all the identified alternatives focusing on the geographical, physical, biological social, economic, and cultural aspects of the environment;

22.5. to identify the key issues to be addressed in the assessment phase;

22.6. to agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and

22.7. to identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.[1]

23. Although the objects of scoping referred to above refer to the identification and confirmation of the preferred activity, technology alternative, and preferred site, those preferences must be understood as guiding the EIA phase, and cannot be used to exclude the assessment and evaluation of any feasible alternatives during the EIA phase.

24. A scoping report must contain all information set out in Appendix 2 to the 2014 Environmental Impact Assessment Regulations ("**EIA Regulations, 2014**") or comply with any applicable protocol or minimum information requirements.[2] This means that a DSR:

24.1. must identify:

24.1.1. the relevant issues for consideration,

24.1.2. the potential environmental impacts of the proposed activity, including cumulative impacts;

24.1.3. alternatives to the proposed activity that are feasible and reasonable, including advantages and disadvantages that the proposed activity or the alternatives may have on the environment and the community that may be affected; and

24.1.4. applicable legislation, policies and guidelines;

24.2. must consider the need and desirability of the proposed activity; and

24.3. must include a plan of study for EIA.

25. Appendix 2 is not merely descriptive - it is the legal standard against which the adequacy of the scoping report must be measured. The competent authority must either accept the scoping report and allow the process to

[1] EIA Regulations, 2014, Appendix 2, section 1. Objective of the Scoping Process,
[2] EIA Regulations, 2014, reg 21(3).

continue to the assessment phase or refuse to grant an environmental authorisation if the report conflicts with a legal prohibition or does not substantially comply with Appendix 2.[3]

26. The current DSR runs to 776 pages and with appendices and supporting materials, the scoping package made available to I&APs extends to approximately 2,567 pages. While the Regulations do not prescribe a page limit for a scoping report, the DSA includes a large volume of material that is related to the EIA phase rather than the scoping phase, and the conflation of the two phases has made it difficult for I&APs to comment effectively.

Conflation of scoping and EIA phases

27. The DSR repeatedly states that the impacts "will be further assessed during the EIA process" and yet, it undertakes a comparative assessment which should form part of the EIA phase as contemplated in Appendix 3.

28. This conflation of the scoping and EIA phases is apparent in several respects:

    28.1. First, the DSR contains highly developed significance assessment tables across almost every specialist theme, including the impacts on construction, operation and decommissioning. It further assigns detailed pre- and post-mitigation ratings for both sites.

    28.2. Secondly, numerous specialist studies go beyond identifying issues requiring further investigation and instead express clear comparative preferences between sites. By way of example, the dune geomorphology and flora assessments favour Bantamsklip while other assessments like the terrestrial biodiversity and marine ecology assessment favour Thyspunt.

    28.3. Thirdly, section 11.4 of the DSR recommends that Bantamsklip be scoped out and that Thyspunt proceed as the preferred location for further assessment. It is not permissible to exclude the assessment and evaluation of a feasible alternative site by excluding it from the scope of study.

    28.4. Fourth, Table 11-4 narrows the alternatives to be considered during the EIA phase to Thyspunt alone, with only design alternatives remaining to be assessed within that site.

    28.5. Fifth, the climate change scoping report records that the full climate change impact assessment will be undertaken only "for the preferred site (Thyspunt).

29. The conflation of the scoping and EIA phases has:

[3] Ibid at reg 22.

29.1. impeded meaningful public participation by making it difficult for stakeholders to identify what is genuinely scoping-relevant (issues and impacts) versus what is premature technical detail; and

29.2. resulted in the scope of study being narrowed as a consequence of decisions or determinations that should not have been made prior to a full assessment during the EIA phase.

Predetermination:

30. The Scoping Report is foundational to the whole S&EIA process, and it is particularly important that it is objective and does not seek to bias the investigations and assessments that occur during the EIA, predetermine the outcomes of the assessment phase, or prejudge the issues. Unfortunately, this DSR does just that.

31. Procedural actions during the Scoping Phase suggest the process is biased toward confirming a preferred result instead of fairly comparing alternatives.

32. The pre-application meeting minutes attached as Appendix J to the Draft Scoping Report raise serious concerns regarding procedural fairness, objective decision-making and the risk of a predetermined outcome in respect of the identification of Thyspunt as the preferred site. Rather than demonstrating an open-ended Scoping Phase intended to identify and evaluate reasonable alternatives in compliance with NEMA, the minutes reveal repeated discussions focused on advancing Thyspunt through the regulatory process based largely on programme readiness, transmission integration, and alignment with the Integrated Resource Plan ("**IRP**") timelines.

33. Of particular concern is the explicit acknowledgement during the meeting that Bantamsklip is "not fatally flawed" yet would likely be excluded from further consideration because it would not meet the anticipated construction timeframes linked to the IRP 2025. The minutes further record that Eskom and WSP proposed that Bantamsklip be scoped out during the Scoping Phase so that only Thyspunt would proceed into the EIA phase.

34. The concern regarding pre-determination is compounded by repeated references throughout the meeting to Thyspunt's "readiness", existing transmission planning, concurrent Nuclear Installation Site Licence processes, and Strategic Infrastructure Project ("**SIP**") alignment. These discussions indicate that substantial strategic and institutional momentum has already been directed toward Thyspunt before the Scoping Phase has been completed and before specialist investigations required under the EIA phase have been undertaken.

35. This creates the appearance that the environmental process is being used to validate a preferred outcome already selected through parallel planning and infrastructure processes, rather than objectively determining environmental suitability through the NEMA process.

36. The minutes further indicate that alternative sites such as Brazil and Schulpfontein were excluded primarily due to cost, transmission corridor complexity and timing considerations, rather than through a transparent comparative environmental assessment process.

37. Similarly, Bantamsklip appears to have been deprioritised because additional studies and updated investigations would be required, despite the acknowledgement that the site itself was not environmentally disqualified. This demonstrates that non-environmental considerations are materially influencing the alternatives assessment at the Scoping Phase, contrary to the purpose of Scoping under the EIA Regulations, which is to identify and assess reasonable and feasible alternatives on an objective basis.

38. Importantly, the minutes show that DFFE officials expressly cautioned Eskom and WSP regarding the legal and procedural risks associated with narrowing the assessment to Thyspunt at such an early stage. DFFE officials themselves warned that this approach could create the perception of a "predetermined" process and could potentially be challenged. The minutes record concerns from DFFE that proceeding with only one site at the EIA stage may undermine the legal requirement to properly assess alternatives and may expose the process to procedural vulnerability. These warnings are highly significant. They demonstrate that even the Competent Authority recognised the danger that the process could be perceived as biased or procedurally unfair if alternatives were prematurely excluded before the completion of detailed specialist investigations.

39. The Draft Scoping Report should therefore not proceed on the assumption that Thyspunt is the preferred or inevitable outcome. Instead, all reasonable alternatives must remain genuinely open to consideration until the EIA phase investigations have been completed and independently assessed.

Documents not included: Site Safety Report

40. A major concern is that the Site Safety Report ("**SSR**") prepared by Eskom in 2025 has not been included as part of the Draft Scoping Report documentation made available to the public, despite numerous references to the SSR throughout the specialist scoping studies and the main report. This means that Interested and Affected Parties are expected to comment on conclusions and assumptions that are based on a report they have not

been allowed to review. Failure to disclose these documents prevents the public from properly assessing or challenging the assumptions that underpin many of the specialist findings and site suitability conclusions in the Draft Scoping Report.

41. The repeated reliance on the SSR creates the impression that nuclear engineering and National Nuclear Regulator ("**NNR**") requirements are driving the process, rather than environmental considerations under NEMA.

42. We understand that there is a regulatory "catch-22" regarding which process should come first, the environmental authorisation process or the Nuclear Installation Site Licence (NSIL) process. However, it is reasonable to expect that the basic viability of Thyspunt as a nuclear site from a safety and risk perspective should already have been established before embarking on an extremely costly and resource-intensive EIA process of this scale.

43. The current situation raises serious concerns regarding fruitless and wasteful expenditure. Eskom initiated the Thyspunt site licensing process in 2016, yet almost a decade later the National Nuclear Regulator (NNR) was still unable to finalise its assessment due to outdated information and outstanding data requirements (June 2022). According to public record Eskom applied to the NNR for an extension in March 2023 to allow them to provide updated information. The NNR allowed and extension until 31 March 2024. During this time Eskom continues to incur significant costs associated with maintaining and progressing the site licence application, including ongoing regulatory and technical expenses payable to the NNR.

44. This creates a fundamental contradiction in the Draft Scoping Report. On the one hand, the DSR repeatedly attempts to portray the original Nuclear Site Investigation Programme (NSIP) and subsequent site investigations as robust, comprehensive and sufficient to support Thyspunt as a preferred site. Yet on the other hand, the site's nuclear viability and licensing suitability still appear unresolved nearly ten years after the licensing process commenced.

45. If the original site identification and screening processes were indeed as reliable and conclusive as the DSR suggests, then a key question arises: why is the viability of the site from a nuclear safety and regulatory perspective still uncertain after so many years of investigation and assessment?

46. The lack of transparency surrounding the updated Site Safety Report (SSR) and the unresolved status of the site licence process therefore undermine public confidence in the environmental process and reinforce concerns that the EIA may be proceeding before fundamental site viability questions have been properly resolved.

47. This risks creating the impression that critical decisions regarding site suitability may already have been made before the environmental process has been properly completed.

48. It is therefore requested that the full SSR and all supporting technical studies relied upon by the specialists be released for public review before the scoping process proceeds further.

49. The DSR and accompanying specialist reports reveal a troubling inconsistency regarding the availability and use of underlying technical information, particularly the Eskom 2025 SSR and associated engineering data.

50. It is clear that the Eskom 2025 SSR and related updated project information have been used by several specialists during preparation of the current Scoping reports. Examples of this include the detailed engineering drawings contained within the Freshwater Ecology Scoping Report (Appendix G), including plans dated May 2023, which identify proposed infrastructure layouts and even areas earmarked for spoil dumping. This confirms that updated project-specific information and newer engineering concepts were available and actively informing portions of the current assessment process.

51. However, the Oceanography Scoping Report (Appendix G 13 Part 1) discloses that key underlying reports and datasets, including several reports listed in Table 1.1 and apparently including the Eskom 2025 SSR Rev 0, were "not yet available/received" at the time that the report was prepared. The specialist consequently relied upon interpretations derived from the much older Giljam (2011a, b) Nuclear-1 EIA assessment rather than direct review of the underlying current reports themselves.

52. This contradiction raises serious concerns regarding, the selective availability of information to specialists, the integrity and consistency of the Scoping process, the independence of the Environmental Assessment Practitioner and the possibility that the process is being managed toward a predetermined outcome.

53. If updated SSR-linked information and engineering layouts were sufficiently advanced to inform specialist designs, infrastructure footprints, spoil disposal planning, and technical layouts, then there is no reasonable justification for withholding the underlying reports and datasets from Interested and Affected Parties, and the broader public participation process.

54. The result is a deeply concerning situation where specialists produced reports before having access to important datasets and the public was expected to comment on conclusions derived from inaccessible reports.

55. The current approach gives the impression that the DSR process is not functioning as an independent and objective environmental assessment in accordance with NEMA. Instead, it appears to be a coordinated effort intended to facilitate Eskom's preferred outcome while reducing scrutiny of important underlying information. These cumulative inconsistencies heighten concerns about procedural fairness, possible predetermination, and the independence of WSP during the Scoping process.

LEGAL AND POLICY FRAMEWORK

56. One of the objectives of a scoping process is to identify the relevant policies and legislation relevant to the activity.[4] The DSR correctly identifies the National Environmental Management: Integrated Coastal Management Act No. 24 of 2008 ("**NEM:ICMA")** as being relevant to the S&EIA for the Nuclear-2 Project on the basis that it is "proposed to be constructed and operated within the coastal zone." The site falls within the coastal protection zone,[5] (which forms part of the coastal zone) and some of the Project activities will take place within the littoral active zone and within 100 metres of the high-water mark. According to the DSR, the proposed nuclear power plant ("**NPP**") would require three separate Discharge Permits in terms of section 69 of NEM:ICMA,[6] and may also need a permit in terms of section 71 for dumping of spoil material at sea.

57. However, the DSR fails to identify that because authorisation is being sought for listed activities within the coastal zone (i.e. "coastal activities") section 63 of NEM:ICMA applies to the EIA process. As a consequence of this omission, the DSR does not envisage the undertaking of a range of specialist studies that would be necessary to enable the competent authority to consider adequately the factors specified in section 63, and the plan of study is similarly deficient.

58. For example, the scope of study must be sufficiently comprehensive to enable the competent authority to determine the following issues (among others):

    58.1. The extent to which the Project would affect the coastal protection zone, whether it is consistent with the purpose of that zone and whether the nature of the activity requires that coastal location.

[4] These are listed in section 1. Objective of the Scoping Process in Appendix 2 to the EIA Regulations, 2014.
[5] The site is situated within one kilometre of the high-water mark and was zoned for agricultural or undetermined use and consequently forms part of the coastal protection zone by virtue of section 16(d)(i) of NEM:ICMA.
[6] One for water for the Outfall Structure, for brine disposal as part of the Desalination Plant and one for the discharge of treated liquid Radwaste.

58.2. The extent to which the applicant has in the past complied with similar authorisations.

58.3. Whether the nature of the proposed Project requires it to be located within coastal public property, the coastal protection zone or coastal access land; whether the Project will affect coastal public property, the coastal protection zone or coastal access land, and if so, the extent to which the Project is consistent with the purpose for establishing and protecting those areas. Specifically, the competent authority must consider whether or not: (i) Project activities within coastal public property, are inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations; (ii) Project activities within the coastal protection zone are inconsistent with the purpose for which a coastal protection zone is established as set out in section 17 of NEM:ICMA; and (iii) Project activities within coastal access land are is inconsistent with the purpose for which coastal access land is designated as set out in section 18;

58.4. The extent to which the Project is consistent with the estuarine management plans, coastal management programmes, coastal management lines and coastal management objectives applicable in the area; and would substantially prejudice the achievement of any coastal management objective.

58.5. The socio-economic impact if the Project is authorised and if it is not authorised.;

58.6. The likely impact of coastal environmental processes on the proposed Project and whether is likely to be significantly damaged or prejudiced by dynamic coastal processes.

58.7. Whether the Project is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment that cannot satisfactorily be mitigated;

58.8. Whether or not the Project would be contrary to the interests of the whole community.

58.9. Whether the proposed NPP will provide important services to the public when using coastal public property, the coastal protection zone, coastal access land or a coastal protected area.

59. The Scoping Report must expressly state that section 63 applies to the EIA process environmental authorisation decision and it should demonstrate how each of the section 63(1) factors will be addressed in the assessment.

60. Furthermore, section 21 of NEM:ICMA decisions related to activities in coastal waters must be taken in accordance with the Republic's obligations

under international law. The legal and policy section of the DSR should deal with the relevant international law obligations.

IDENTIFICATION OF ISSUES AND IMPACTS

Deferral of issue identification

61. The Draft Scoping Report fails to fulfil the statutory purpose of scoping under NEMA. Rather than properly identifying, characterising, and defining key impact pathways, alternatives, cumulative effects, and baseline environmental conditions, the DSR repeatedly defers critical determinations to EIA Phase. Several important specialist studies base their recommendations on narrative instead of scientifically verified data, which signals a major shortcoming in scoping rather than merely insufficient detail.

62. These inadequacies are addressed in the appendices to this report, and are summarised below for ease of reference.

63. The problems identified can't be fixed later by appealing or using an EIR; they go straight to the heart of whether the Scoping Phase was done correctly, like making sure the project's scope, options, basic ideas, and possible effects are clearly identified as required by NEMA.

64. A Scoping Report cannot lawfully defer the identification of potentially significant impacts, cumulative impacts, fatal constraints or technically foreseeable consequences to later phases where such omissions prejudice meaningful public participation and informed decision-making.

Biophysical issues and impacts inadequately identified or described

Dune geomorphology and coastal processes

65. **Episodic fluvial and aeolian process interactions.** The DSR does not adequately consider **episodic river flooding, sediment delivery, and aeolian transport** that shape the Oyster Bay dunefield. Impacts on dune stability, erosion/accretion patterns, and knock-on effects for coastal protection and infrastructure vulnerability are therefore not fully identified.

66. **Hydro-geomorphic connectivity and groundwater-dependent dune systems.** Recent peer-reviewed work (e.g. Mohuba et al., 2020, as referenced in the appendices) indicates complex hydraulic connectivity between aquifers and dune wetlands. The DSR fails to integrate this knowledge into **impact identification**—for example, how foundations,

dewatering, roads and spoil mounds could alter groundwater flows and thereby destabilise dune systems and associated ecosystems.

67. **Need for quantitative terrain and flood modelling.** The integrated aeolian–fluvial geomorphological assessment, flood hazard analysis and numerical terrain evolution modelling, that is necessary is not evident in the DSR's scoping of issues. As a result, long-term landscape evolution and flood risk impacts are under-represented. The specific investigations required in this regard are explained in "Appendix 1".

Marine ecology

68. **Lack of defined spoil disposal sites and pathways.** The DSR does not clearly identify specific marine spoil disposal sites, volumes, timing or methods. Therefore, impacts such as benthic smothering, turbidity plumes, habitat loss and recovery times for sensitive species are not adequately scoped.

69. **Insufficient baseline subtidal and offshore biodiversity data.** The DSR does not require comprehensive subtidal surveys, benthic habitat mapping and species inventories. This undermines identification of potential impacts on sensitive or endemic species and habitats, including reefs, kelp beds and soft-bottom communities.

70. **Thermal plume and cooling water ecological impacts.** The DSR relies on preliminary, conceptual thermal plume modelling without fully examining ecological consequences for plankton, invertebrates, fish, and particularly the chokka squid fishery which is highly sensitive to local environmental change. The cumulative impacts of thermal discharge, entrainment and impingement, and pollution from biocides or anti-fouling agents are not comprehensively scoped.

71. **Cumulative marine impacts.** The DSR does not systematically identify the combined effects of spoil disposal, tunnel construction, vessel traffic, coastline modification and long-term thermal discharge as cumulative marine impacts. The specific investigations required in this regard are explained in "Appendix 2".

Oceanography and coastal dynamics

72. **Sediment transport and shoreline evolution.** The DSR does not present robust, scenario-based modelling of nearshore and offshore sediment transport, wave climate variability and shoreline response to the proposed infrastructure. Impacts on coastal erosion, beach stability and long-term morphological change are therefore not properly scoped.

73. **Spoil fate and hydrodynamics.** There is inadequate identification of how disposed dredge spoil would be redistributed by currents and storms, and what this implies for navigation, fisheries and habitats.

74. **Seasonal and extreme event dynamics.** The scoping does not fully capture seasonal upwelling, storm surges, extreme wave events and climate change-induced shifts in oceanographic patterns that could amplify project impacts. The specific investigations required in this regard are explained in "Appendix 3".

Geohydrology and groundwater-dependent ecosystems

75. **Ecological functioning vs engineering feasibility.** The DSR's geohydrological work is focused on engineering feasibility (e.g. foundation stability, dewatering of excavations) instead of the ecological functioning of the connected Algoa Group and Table Mountain Group (TMG) aquifers. This means impacts on wetlands, seeps, springs and groundwater-dependent vegetation are not properly identified as ecological issues but treated as simple receptors.

Hydraulic connectivity & ecological reserves

76. Evidence of hydraulic connectivity between upper and deeper aquifers, and their role in sustaining wetlands and baseflows, is not translated into an assessment of impacts on groundwater-dependent ecosystems' ecological reserve and resilience. Consequently, potential impacts from dewatering, contamination, and changes in recharge are under-identified.

Lack of long-term monitoring and cumulative assessment at scoping level

77. The DSR does not comprehensively scope seasonal monitoring, time-series analysis and cumulative impact assessment across the project footprint, as required future work. The specific investigations required in this regard are explained in "Appendix 7".

Freshwater ecology and hydrology

78. **Groundwater–surface water linkages.** Mohuba et al. (2020) indicate that there is a more complex interaction between surface waters, wetlands and groundwater than assumed in older studies. The DSR does not adequately identify impacts on wetland hydrology, wetland integrity, stormwater regimes, and baseflows arising from construction, dewatering, and altered drainage.

Stormwater and sewage management impacts

79. The scoping of **stormwater and sewage disposal** issues is superficial, with limited identification of risks like eutrophication, contamination of wetlands and estuaries, and increased flood peaks. The specific investigations required in this regard are explained in "Appendix 8".

Terrestrial biodiversity and ecological processes

80. **Outdated or inconsistent vegetation mapping and threat status.** The DSR relies on inconsistent vegetation classifications and misrepresents or understates the threat status and ecological importance of St Francis Strandveld and associated ecosystems. This leads to under-identification of impacts on critically important, process-driven systems that support climate resilience and biodiversity.

81. **Landscape-scale ecological processes and climate refugia.** Impacts on migration corridors, ecological connectivity, fire regimes, and potential climate refugia are not adequately identified in the DSR. Specialist studies are required to assess how large-scale infrastructure, roads and spoil mounds would disrupt these landscape processes.

82. **Insufficient multi-seasonal surveys.** The DSR does not identify the need for multi-seasonal flora and fauna surveys, thus downplaying potential impacts on rare or seasonal species, including protected plants, amphibians, reptiles, birds and mammals. The specific investigations required in this regard are explained in "Appendix 10".

Access roads and associated impacts

83. **Road alignments, condition and upgrade requirements.** The DSR treats "existing" access roads as if they can simply be used, without acknowledging that they are in poor condition and will require substantial upgrades, widening, new drainage and potentially new alignments. This means that associated impacts on wetlands, seeps, dunes, vegetation, heritage sites, and flood risk are therefore not adequately identified.

84. **Hydrological and stormwater impacts from roads.** Changes in runoff patterns, culverting of streams, and increased erosion from roadworks are not comprehensively scoped as issues for investigation. The specific investigations required in this regard are explained in "Appendix 9".

Tunnels and marine infrastructure

85. **Construction methods and seabed disturbance.** The DSR does not adequately scope the impacts of alternative tunnel construction methods (e.g. directional drilling vs trenching vs drill-and-blast) on benthic habitats,

sediment plumes, underwater noise and vibration. Failure scenarios (e.g. tunnel leaks, collapse) and associated environmental risks are not identified at scoping level.

86. **Acoustic and ecological disturbance.** Potential impacts of underwater noise and construction activity on marine mammals, fish and other fauna are insufficiently identified. The specific investigations required in this regard are explained in "Appendix 6".

Spoil generation, handling and disposal

87. **Magnitude and character of spoil volumes.** Spoil volumes in the order of ~6.37–10 million m^3 of sand plus large rock volumes are not treated as a central impact driver in the DSR.

88. The creation of significant new artificial landforms (stockpiles, mounds) with long-term visual, hydrological, and ecological consequences is not adequately identified.

89. **Site selection and design for spoil facilities.** The DSR does not identify specific onshore spoil sites, their footprints, heights, drainage systems or long-term stability, nor does it scope the impacts of these options on soils, agriculture, wetlands, biodiversity, and heritage. The specific investigations required in this regard are explained in "Appendix 5".

90. **Marine spoil disposal impacts.** As noted under marine ecology and oceanography, the location, method and frequency of marine spoil disposal are insufficiently identified, and so are the associated impacts on benthic habitats, turbidity, and fisheries.

Cooling water intake and discharge

91. **Once-through seawater cooling vs alternatives.** The DSR treats once-through seawater cooling as the default, with alternatives framed narrowly and largely as technical mitigations. It fails to identify the broader range of environmental impacts associated with different cooling choices (e.g. marine vs freshwater draws, evaporation losses, energy efficiency trade-offs, inland siting possibilities).

92. **Entrainment, impingement and thermal pollution.** The scoping does not comprehensively identify impacts on plankton, fish eggs and larvae, invertebrates and larger organisms drawn into intake structures (entrainment/impingement), nor detailed impacts of thermal plumes on local ecosystems.

93. **Cumulative and long-term marine system changes.** Potential long-term changes in local temperature regimes, species composition and fishery productivity due to chronic thermal discharge are not fully recognised as

issues for investigation.

Socio-economic and community-level impacts

94. The DSR understates or omits several significant socio-economic issues:

Labour influx and demographic change

95. The DSR does not adequately identify impacts associated with large-scale worker influx, including housing demand, informal settlements, pressure on services, and social conflict potential, informed by lessons from other mega-projects such as Medupi/Lephalale. The specific investigations required in this regard are explained in "Appendix 4".

Local economic structure and benefit distribution

96. The scoping lacks a robust identification of how the project could reshape the local economy, including crowding out existing sectors (tourism, fisheries, small-scale agriculture) and who benefits vs who bears the burdens.

Cost of living and municipal services

97. The DSR does not thoroughly identify impacts on rents, food prices, traffic congestion, water and sanitation services, waste management, and health facilities, all of which may be strained by population and economic shifts.

Institutional capacity and governance

98. The DSR does not identify the importance of assessing whether local municipality, policing, emergency services, education and health systems have the capacity to absorb project-induced changes and risks.

Tourism and fisheries impacts

99. Potential negative impacts on the lucrative chokka squid fishery, recreational fishing, coastal tourism, sense of place, and property values are not comprehensively identified.

Post-construction "bust" and long-term socio-economic trajectory

100. The DSR under-identifies the risk of a post-construction decline, with job losses, stranded housing and infrastructure, and social problems after the construction peak has passed.

NEED AND DESIRABILITY

101. One of the objectives of a scoping process is to motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location.[7]

102. Section 5 of the DSR (pp 136 – 161) makes the case for the need and desirability of nuclear power in South Africa, For example, it refers to:

    102.1. the National Development Plan (NDP) 2030 which emphasises "the need for a diversified, secure, and sustainable energy mix, promoting renewables (solar, wind, hydro) and clean coal, while calling for a thorough investigation into nuclear energy's costs, financing, safety, and benefits as a potential baseload option, rather than an immediate commitment" (at p. 140);[8] and

    102.2. the Integrated Resource Plan, 2025 ("**IRP 2025**") which "aims to minimise the cost of electricity to the economy – least cost power system planning, subject to certain constraints (environment, lead times, etc); and the environmental impact of electricity supply – planning for reduction in global and local emissions while achieving the above objectives";[9]

103. The DSR also includes Tables that list various factors relevant to the evaluation of the need for the Project at Bantamsklip and Thyspunt (Table 5.4- Part 1- Need)) and its desirability (Table 5.5- Part 2- Desirability).

104. However the DSR avoids addressing the most important issue, namely the need and desirability of undertaking an enormously expensive project that will have severe environmental impacts on the Thyspunt site, in order to generate electricity that can be generated from renewable energy sources far sooner, more cheaply, and in a manner that creates less environmental, and financial risk and far more jobs.

105. The DSR deals very briefly with the renewable energy (p.144) and argues that nuclear is necessary to supplement renewables, because "renewable energy sources such as wind and solar …. cannot alone provide the stability and continuity needed for a secure national grid. Renewables remain intermittent and weather dependent, …" and that "Nuclear power is the only clean baseload power source with a high EAF (far higher than renewables), ensuring consistent supply regardless of weather conditions". It concludes that nuclear and renewables should play mutually reinforcing roles: "Renewables contribute by reducing emissions rapidly due to fast

[7] These of listed in section 1. Objective of the Scoping Process in Appendix 2 to the EIA Regulations, 2014.
[8] DSR, p.140.
[9] DSR, p.140.

deployment rates, lowering system marginal costs when generation is available, and diversifying and decentralising the energy landscape. On the other hand, nuclear power provides round-the-clock, high capacity, low-carbon baseload, supports grid stability to enable higher renewable penetration, and ensures long-term energy security as coal retires."

106. The DSR essentially rules out renewable energy facilities as a viable alternative sources of the electricity which it proposes Nuclear-2 will generate because it relies on the out-of-date and mistaken idea that "base-load" electricity supply from coal or nuclear is essential to supplement renewable energy sources.

107. As explained below in our comments on the exclusion of renewables as an alternative, technological advancements in battery energy and storage systems linked to renewable energy plants mean that energy from periods of excess generation can be shifted to periods of high demand. Although wind and solar PV generation are variable at the point of production, the combination of renewable generation with storage and other flexible resources means that electricity throughout the overall system dispatchable. It does not matter whether an individual generator is dispatchable, provided that there is an integrated portfolio that can reliably provide the required firm capacity and energy at the right time, and at least cost.

108. The Scoping Report must provide for specialist studies that evaluate the need and desirability of the Project when compared with generating the same amount of electricity from renewable energy sources. At minimum those specialist studies must include: an independently conducted levelised cost of energy comparison between the proposed NPP and a renewable energy portfolio under South African financing conditions; a tariff impact analysis modelling the effect on end-user electricity prices; a comparative jobs assessment across the full project lifecycle including construction, operation, decommissioning, and foregone alternative investment; and a cost-of-capital sensitivity analysis reflecting South Africa's sovereign risk premium as identified at paragraph 105 above. These studies must be conducted by specialists independent of Eskom and WSP and must be available for I&AP comment before the EIA phase commences.

ALTERNATIVES

109. The objects of a scoping process[10] include:

[10] These of listed in section 1. Objective of the Scoping Process in Appendix 2 to the EIA Regulations, 2014.

109.1. to identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks; and

109.2. to identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological social, economic, and cultural aspects of the environment;

110. The EIA Regulations, 2014 contain the following definition:

*"**alternatives"**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity which may include alternatives to the—*

(a) property on which or location where the activity is proposed to be undertaken;
(b) type of activity to be undertaken;
(c) design or layout of the activity;
(d) technology to be used in the activity; or
(e) operational aspects of the activity;

and includes the option of not implementing the activity;"

6.1 Exclusion of renewable energy alternative

111. The DSR incorrectly excludes consideration of renewable energy sources as a viable alternative to generating electricity from the proposed NPP, and explains this exclusion (at p.196) as follows.

"Treatment of Renewable Energy in the Screening of Alternatives

While renewable energy sources such as wind and solar photovoltaic generation are indispensable to South Africa's decarbonisation pathway and form a critical component of future electricity supply, they are not considered base-load or firm electricity sources when assessed in isolation. This is due to their inherent variability and dependence on meteorological conditions, which limits their ability to provide continuous, dispatchable electricity and to contribute predictably to system adequacy under all demand and operating conditions.

Renewable energy is therefore considered only within a firmed portfolio configuration, comprising utility-scale wind and solar generation combined with appropriate flexibility and firming measures, such as short- and long-duration energy storage and/or dispatchable firm capacity. This approach ensures that alternatives are compared on a functionally equivalent basis, namely their ability to deliver large-scale, firm and dispatchable electricity services comparable to the proposed development, rather than on annual energy output alone."

112. In fact, renewable energy provides the most obvious, feasible and ecologically, financially and socio-economically superior, alternative to constructing a NPP to generate electricity. The Scoping Report must provide for a full evaluation of this alternative. If this is done, it will demonstrate that it would be irrational to construct a very costly NPP at this time.

113. The DSR essentially rules out renewable energy facilities as viable alternative sources of the electricity which it proposes Nuclear-2 will generate because it relies on the out-of-date and mistaken idea that "base-load" electricity supply from coal or nuclear is essential to supplement renewable energy sources.

114. Technological advancements in battery energy and storage systems ("**BESS**") linked to renewable energy plants mean that energy from periods of excess generation can be shifted to periods of high demand.

115. The decoupling of generation from consumption removes the historical requirement that firm supply must originate from continuously operating thermal generators. These advancements reduce or negate previous concerns that renewable energy technologies are non-dispatchable (i.e. power generation is dependent on the availability of an intermittent resource, such as wind or solar) and cannot provide a consistent power supply. The advancements mean that when wind or sunshine is abundant, excess power generated by solar or wind plants can be stored. That excess power can then be dispatched later, when there is no wind or sunshine but demand for power is high.

116. Although wind and solar PV generation are variable at the point of production, the combination of renewable generation with storage and other flexible resources means that electricity throughout the overall system is dispatchable. It does not matter whether an individual generator is dispatchable, provided that there is an integrated portfolio that can reliably provide the required firm capacity and energy at the right time, and at least cost.

117. Nuclear power is among the most expensive forms of new electricity generation. The construction costs are high and construction periods long which mean that nuclear has very high financing requirements. Because nuclear projects require very large upfront capital investment and take many years to complete, their total cost is highly sensitive to the cost of capital (i.e. the cost of securing the funds to pay for the NPP).

118. South Africa faces materially higher borrowing costs and greater financing risk than most developed economies where nuclear power plants have been built as the cost of capital increases, the Levelized Cost of Electricity ("**LCOE**") from nuclear power rises sharply. The cost of renewable energy

technologies are far less sensitive to interest-rate risk because they have shorter construction timelines and lower upfront capital exposure.

119. Consequently, under South African financing conditions, the cost gap between nuclear power and renewable energy-based alternatives is not merely large, it widens further as capital becomes more expensive. This makes nuclear power a particularly high-cost and high-risk option for South Africa's electricity system, especially when compared to wind, solar and storage technologies that can be deployed incrementally, at lower financial risk, and over much shorter timeframes.

120. The objection submitted by Donald McGillivray (Energy Specialist, for the Thyspunt Alliance) is particularly relevant in this regard. For example, he points out that:

    120.1. "Fixing "Nuclear" as the preferred energy alternative before any comparative assessment predetermines the outcome and reduces the alternatives exercise to confirmation of a chosen activity — the precise failure the DSR's own text (pp. 162–163) warns against" and

    120.2. "The Need-and-Desirability chapter contains no quantified cost, no tariff-impact analysis and no comparison of competing options — so the constitutional affordability dimension of need and desirability (GN 792; Constitution ss 24 and 27) is unaddressed."

121. It is crucial that the EIA process assess the relative merits and costs of generating electricity from renewable energy as opposed to nuclear energy. This is relevant as an alternative to the Project, to an assessment of the need and desirability of the Project, and to a proper understanding of the implications of not authorising the construction of a NPP. If the Scoping Report does not require this, this issue will not be assessed, and the information placed before the decision-makers will be insufficient to enable the decision-maker to make an informed decision on the best practicable environment option whether or not the application should be refused.

122. Consequently, it is essential that the Scoping Report must provide for specialist studies that evaluate the alternative of using renewable energy sources instead of building a NPP

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Chapter 6: Project Alternatives

6.2 Siting Alternatives:

123. The DSP states that the alternative locations for the proposed NPP were derived from the findings of the Nuclear Site Investigation Programme

("**NSIP**") study undertaken by independent consultants during the 1980s and the findings of the EIA process undertaken for Nuclear-1.[11] According to the DSR, the NSIP findings have been "progressively tested, refined, and confirmed" through subsequent investigations and EIA processes.

124. The range of feasible alternative sites is of fundamental importance to this process yet the NSIP has not been made available to I&APs. This means that they are unable to determine whether feasible alternative sites were excluded, and others weighted differently, on the basis of considerations which the apartheid regime considered important but which would be irrelevant or unacceptable in the democratic era. The DSR should provide for a new study to determine potential alternative sites on the basis of the best available information. Such a study may well exclude sites which the NISP identified as suitable, on the basis that environmental impacts and risk that may have been regarded as acceptable more than 40 years, would no longer be regarded as acceptable in 2026.

125. Furthermore, the previous Nuclear-1 Environmental Authorisation process did not merely "strengthen" or "confirm" the original NSIP conclusions. Instead, it rejected Eskom's argument that Thyspunt should be the preferred environmental option. The competent authority explicitly concluded that the environmental impacts associated with Duynefontein were "acceptable and materially lower than those at the Thyspunt site" and authorised the construction of a NPP at the Duynefontein site instead of at Thyspunt.

126. Eskom's position is that:

"*All sites identified in the 1980s remain viable because no fatal flaws have been identified*."

127. This reduces a complex legal test to a simplistic one, they are treating the Environmental Impact Assessment process as an engineering feasibility test. However, the absence of fatal flaws should be the minimum requirement for a site to be assessed, not the standard for a site to be an acceptable alternative. In the Thyspunt scoping process, the repeated framing that "all sites remain viable because there are no fatal flaws" appears to narrow the legal test incorrectly.

128. The DSR appears to conflate:

128.1. the absence of a fatal flaw;

128.2. continued technical viability; and

128.3. environmental preferability.

[11] DSR p, 164

129. These are not equivalent concepts under NEMA. The fact that Thyspunt remained technically viable does not negate the previous finding that another site was environmentally preferable.

130. The Draft Scoping Report should therefore transparently explain:

- how the current process departs from the comparative conclusions reached in the Nuclear-1 Environmental Authorisation;
- why it considers the original NSIP weighting and ranking methodology to defensible; and
- why the outcome of the Nuclear-1 EIA process should not be interpreted as evidence that the earlier site selection process requires reconsideration.

131. The Draft Scoping Report appears to rely heavily on the absence of "fatal flaws" as evidence of site acceptability. This is an incorrect interpretation of the purpose and legal framework of Environmental Impact Assessment under NEMA.

131.1. An EIA is not a binary pass/fail exercise where a project proceeds unless a single catastrophic flaw is identified. NEMA requires a comparative and integrated assessment of environmental acceptability, sustainability, cumulative impacts, risk, uncertainty, alternatives, and the public interest.

131.2. A site may therefore remain technically viable and yet still be environmentally inappropriate or environmentally inferior to another alternative.

131.3. Importantly, the previous Nuclear-1 Environmental Authorisation demonstrates precisely this principle. The competent authority did not identify Thyspunt as fatally flawed. However, it nevertheless concluded that the impacts associated with Duynefontein were "acceptable and materially lower than those at the Thyspunt site."

132. The absence of a fatal flaw is therefore not equivalent to environmental preference, environmental acceptability, or compliance with the objectives of NEMA.

133. Eskom's repeated reliance on the "no fatal flaw" reasoning within the Draft Scoping Report, at the Pre Application meeting with the DFFE and at the various meetings during the public participation process, risks improperly narrowing the purpose of an EIA from a comparative sustainability assessment into a simplistic engineering feasibility exercise.

6.3 Coega as an alternative site:

WSP Draft Scoping Report
6.4.1.4 Coega as an Alternative Site

134. The information presented in Table 6.3 on page 172 of the Draft Scoping Report regarding the exclusion of the Coega Industrial Development Zone (Coega IDZ) as an alternative nuclear site is not only misleading, but factually incorrect in several material respects. Table 6.3 presents a biased justification for excluding Coega, as it relies on irrelevant ecological descriptions and undermines confidence in the objectivity and integrity of the scoping process.

135. The report incorrectly associates the Coega IDZ with the Alexandria dune field and associated Alexandria coastal systems. This is false. The Coega IDZ is geographically distinct from the Alexandria dune field and is not situated within the Alexandria coastal dunefield system referenced in the report.

136. The ecological description provided in Table 6.3 instead appears to describe the Alexandria–Woody Cape coastal section within the Addo Elephant National Park region rather than the actual Coega IDZ area. References to the Alexandria Forest being "unique" and highly sensitive are unrelated to the actual Coega IDZ footprint. These descriptions are a significant geographic misrepresentation of the Coega alternative site.

137. Unlike the Alexandria dune field, the Coega area is not dominated by extensive active mobile dune systems extending tens of kilometres inland. While localised coastal dunes and sandy deposits occur near portions of the shoreline, the Coega IDZ itself is largely an industrial coastal plain rather than a massive transgressive dunefield.

138. It is troubling that the Draft Scoping Report seems to rely on ecological features from a completely different coastal system to justify not considering Coega as an alternative. This approach gives the impression that the decision to exclude Coega is not based on a scientifically sound comparative assessment of alternatives as required by the National Environmental Management Act ("NEMA").

139. The DSR's exclusion of Coega due to unconsolidated sands is questionable, especially since the Thyspunt proposal faces significant geotechnical uncertainties, complex dune systems, excavation challenges, spoil generation, groundwater issues, and unresolved seismic and coastal engineering concerns. Applying strict criteria to Coega while accepting these unresolved problems at Thyspunt as manageable is inconsistent.

140. The claim that emergency planning zones (EPZs) would limit industrial development in the Coega IDZ overlooks the need for a lawful and objective alternatives assessment, as required by constitutional and environmental standards. If industrial compatibility and infrastructure are key exclusion criteria, they should also be applied to tourism, ecological, heritage, and sense-of-place issues at the Thyspunt site and nearby areas.

6.4 Site readiness

WSP DSR Site readiness:

Table 6-4 – Preliminary Comparison between Alternative sites (page174 DSR)

Thyspunt	Bantamsklip
Significant specialist work has been undertaken on site, both for the Nuclear 1 EIA as well as for the NISL application. *Eskom submitted a NISL application to the NNR for the Thyspunt site in 2016 and an updated NISL application in 2026, with the updated documents currently under review by the NNR.* *Public hearings are subject to the NNR board decision, whereby Eskom will be instructed to publish the reports for public review, potentially between September and November 2026.*	*Reaching the stage at which a NISL application could be submitted to the NNR is expected to take approximately 5 years. In this regard, Bantamsklip is materially less advanced than Thyspunt in terms of NISL readiness.*

Comment:

141. Site readiness is not an inherent characteristic but a function of prior administrative investment. By selectively progressing Thyspunt through the licensing process Eskom manufactures a comparative advantage that is then presented as an objective outcome of the scoping process.

Transmission:

Thyspunt	Bantamsklip
Plans are in place for the connection of the Thyspunt site to the National Grid with 1 400 km of 765 / 400 kV lines. Connection is considered achievable before 2039 (60 months after EA and servitudes secured).	*Integrating Bantamsklip into the Western Cape Corridor is challenging in that it will require 2211 km of 765 / 400 kV lines. This is unlikely to be achievable before 2039 due to the complex and sensitive terrain that exists in the surrounding areas.*

Comment:

142. These comments are all based on information provided to WSP by the proponent. The statement implies that transmission infrastructure

specifically enabling Thyspunt already exists or is actively being built for the nuclear project. That is simply not true. The existence of a Transmission Development Plan does not mean construction is imminent or financially secured.

143. There are currently no Environmental Impact Assessments available for any of the proposed transmission lines to qualify the statement under Bantamsklip of "complex and sensitive terrain". We contend that the same "complex and sensitive" terrain exists for the Thyspunt site.

6.5 Access routes

Thyspunt	Bantamsklip
There are no bridge obstructions or steep grades along this route.	

Comment:

144. This statement is not factually correct. See comment under Access routes alternative.

Specialist consensus:

Thyspunt	Bantamsklip
Following the scoping phase specialist input Thyspunt is favoured by 10 specialists with 11 being neutral. Furthermore, no fatal flaws have been identified.	*Following the scoping phase specialist input Bantamsklip is favoured by 6 specialists with 11 being neutral. Furthermore, no fatal flaws have been identified.*

Comment:

145. The numbers indicated in the table are contradictory to the Scoping Phase Recommendation presentation at the Public Meetings.

146. According to the presentation:

- 4 Studies picked Bantamsklip
- 8 Studies picked Thyspunt
- 11 Studies were neutral

147. These consensus findings are also not consistent with the information that appears in the scoping specialists report.

148. Under NEMA, alternatives must be properly investigated and comparatively assessed.

149. A lawful comparative assessment generally requires:

- equivalent levels of information,
- equivalent study intensity, and
- comparable impact characterisation across sites.

150. If detailed investigations are still outstanding, then the comparative baseline is incomplete, cumulative impacts are not fully characterised and confidence levels remain low.

151. A "preferred site" selection at the Scoping Phase therefore lacks rational scientific foundation.

152. In practical terms Scoping should narrow issues for investigation, not effectively lock in the project outcome before the investigations occur. In the context of the Eskom Thyspunt process, this is very important because many of the most consequential impacts marine, hydrological, geomorphological, cumulative infrastructure, spoil disposal, and emergency planning impacts, appear to have been deferred to the EIA phase while narrative momentum toward Thyspunt as the "preferred site" is already being created.

153. It further undermines meaningful public participation. Public participation during scoping depends on stakeholders understanding what is known, what is unknown, and what remains unresolved.

154. If a preferred site is already being framed as effectively decided before detailed EIA investigations the public may reasonably perceive the process as biased, that alternatives are just a smokescreen, and that participation is a mere "box-tick" exercise rather than a substantive opportunity to participate in a process.

WSP Draft Scoping Report
6.4.3 ACCESS ROUTE ALTERNATIVES
6.4.3.2 Thyspunt

> "*The existing transport network within ~50 km of the Thyspunt site is dominated by the N2 (national), R102 and R330 (provincial) roads.*
> *The Route between Gqeberha and Thyspunt is shorter and topographically less complex. This route poses fewer technical difficulties to heavy load transportation vehicles and thus has a smaller associated safety risk (to other road users and transportation staff). There are no bridge obstructions and steep grades along this route.*
> *The Thyspunt site can be accessed via the surrounding provincial road network. The provincial roads are unsurfaced and require regular maintenance by the relevant road authorities. The existing road network and possible link roads to the site are illustrated in Figure 6-10".*

Comment:

155. The Draft Scoping Report creates a misleading impression that access to the Thyspunt site can be achieved with minimal constraints and that transportation impacts are readily manageable. This narrative is inconsistent with the findings of the previous Nuclear 1 FEIR transport investigations and associated specialist studies, many of which identified substantial engineering, geometric, topographical and infrastructural limitations affecting access to the site.

156. The Scoping Report fails to adequately acknowledge, integrate, or critically assess these earlier findings, thereby creating an incomplete and potentially misleading baseline for impact assessment.

157. The previous Nuclear 1 Transport Specialist Studies and Aurecon investigations clearly identified a range of significant constraints associated with abnormal-load haulage, construction traffic and regional access routes. These included:

- severe vertical alignment constraints and sharp sag geometry that rendered certain routes unsuitable for abnormal load vehicles;
- deep valleys requiring major bridge structures or high fills to achieve acceptable gradients;
- bridge strengthening and temporary structural interventions for heavy abnormal loads;
- intersection widening and turning-radius constraints;
- overhead service relocations and cable lifting requirements; and
- substantial road upgrading requirements across multiple regional routes.

158. Alternative bypass alignments were also dismissed because of deep valley crossings requiring costly bridge structures and engineered grade corrections. Furthermore, the FEIR transport investigations recognised that the abnormal-load route would involve bridge constraints, structural interventions and extensive temporary modifications to existing infrastructure.

159. The current Draft Scoping Report appears to selectively simplify or omit these earlier findings, thereby creating the false impression that transportation access to Thyspunt is straightforward and largely unconstrained. This is particularly concerning given that transportation feasibility is not a secondary issue but a fundamental determinant of construction practicality, environmental impact, emergency response capability, public safety, cumulative infrastructure burden, and overall site suitability.

160. The failure to properly scope and disclose these previously identified transport constraints constitutes:

- a failure to establish an accurate baseline environment;
- a failure to integrate relevant prior specialist findings;
- a failure to identify and characterise key engineering and cumulative infrastructure impacts;
- a failure to assess whether transportation-related impacts may materially influence site suitability comparisons; and
- a failure to provide decision-makers and Interested and Affected Parties with a balanced and scientifically defensible understanding of the true logistical complexity associated with the Thyspunt site.

161. **Page 183**:
*There are three proposed alternative access route options to the Thyspunt site as depicted in Figure 6-11, i.e. the eastern, western and northern access roads. However, the northern access road is heavily restricted by the sensitive dune environment, **with the eastern and western roads already existing**. (own emphasis)*
Route alternatives will be further assessed during the EIA phase.

Comment:

162. The claim that the eastern and western access routes to Thyspunt "already exist" is highly exaggerated and almost untrue. What is referred to as "existing" is at most a very bad gravel track. The Freshwater Ecology Scoping report and the related Nuclear 1 FEIR investigations clearly indicate that these route alignments and locations still need to be confirmed and assessed. Additionally, the proposed routes would cross sensitive freshwater systems, requiring new crossings, engineered drainage solutions, and environmental authorisations.

163. If the eastern and western access routes genuinely existed as fully operational infrastructure suitable for a nuclear power station development, there would be no need for the extensive investigation of:

- stream crossings;
- culvert installations;
- hydrological interventions;
- drainage redesign;
- wetland avoidance;
- freshwater ecological mitigation; and

- environmental authorisation for new transport corridors.

164. The EIA phase must therefore explicitly assess the eastern and western access systems as major infrastructure developments with associated large ecological impacts, rather than portraying them as simple utilisation of already existing roads.

6.6 Design Alternative

WSP Draft Scoping Report
6.4.6 DESIGN ALTERNATIVES

165. The "design alternatives" presented in the Draft Scoping Report do not constitute genuine feasible and reasonable alternatives as contemplated under NEMA and the EIA Regulations. They are primarily engineering mitigation measures introduced to reduce impacts associated with a project concept that has already been geographically and technologically constrained.

166. The DSR consistently and inappropriately confuses alternatives assessment with mitigation and design optimisation. This improperly narrows the environmental decision-making process.

167. Eskom must specify the various types of nuclear power plants that it may wish to construct and each must be assessed as an alternative instead of attempting to assess the impacts of a "Plant Parameter Envelope" which is not a project. Plant Parameter Envelopes can be used to identify potential sites for a NPP but not for the purposes of undertaking a project specific EIA.

6.7 Footprint alternatives:

168. The so-called "footprint alternatives" presented in the Draft Scoping Report do not constitute genuine feasible and reasonable alternatives under NEMA, but rather mitigation-driven layout refinements within predetermined development sites. The DSR expressly states that alternative buildable footprints will only be identified during the EIA phase for the already "preferred site," based on sensitivity mapping.

169. This demonstrates that the project concept and site selection have effectively already been fixed, with the remaining exercise limited to minimising impacts through micro-siting and engineering optimisation. Such footprint refinement forms part of the mitigation hierarchy and cannot substitute for a proper alternatives assessment.

170. Sensitivity mapping should inform whether a site is environmentally suitable in the first instance, not merely where infrastructure should be shifted within an already selected and highly constrained coastal development envelope.

171. The report states:

"Alternative buildable footprints will be identified during the EIA phase for the preferred site, with consideration of the sensitivity mapping."

172. It further notes that Figures 6-12 and 6-13 illustrate preliminary "site envelope" layouts for Thyspunt and Bantamsklip respectively.

173. This means that:

- the preferred site selection is effectively already assumed; and
- the remaining exercise is merely to rearrange infrastructure within the chosen site to reduce impacts identified through sensitivity mapping.

174. That is not an alternatives assessment. It is impact mitigation through micro-siting. Under NEMA, a true alternative should involve materially different options capable of avoiding or substantially reducing impacts at a strategic level. By contrast, footprint refinement within a selected site is part of the mitigation hierarchy, specifically minimisation, after a project concept and site have already been selected.

175. The DSR explicitly frames these "alternatives" around:

- "buildable footprints";
- "site envelope layouts"; and
- "consideration of sensitivity mapping."

176. This clearly shows that the exercise is not questioning whether the site itself is environmentally appropriate but merely attempting to fit the infrastructure into the least sensitive portions of an already constrained site.

177. The problem is further compounded by the fact that the Draft Scoping Report proposes that these "alternative footprints" will only be identified during the EIA phase and only for the "preferred site." This effectively means:

- site selection occurs first;
- the alternatives space is narrowed prematurely;
- and only after that does the process attempt to mitigate impacts through footprint refinement.

178. This sequence reverses the proper logic of environmental assessment under NEMA.

179. Sensitivity mapping should inform whether a site is appropriate in the first place, not merely where infrastructure should be shifted after the preferred site has already been selected.

180. The DSR therefore appears to use sensitivity mapping as a tool for mitigation-based design adjustment rather than as a mechanism to critically interrogate site suitability.

181. A further concern is that footprint adjustment cannot eliminate many of the project's largest impacts because they are inherent to the project itself

6.8 Cooling Alternatives

182. The introduction of evaporative or alternative cooling systems fundamentally undermines the original rationale for selecting highly sensitive coastal sites based on access to seawater cooling. If such cooling systems are technically and economically feasible, then the site selection process itself must be revisited, including consideration of whether less environmentally sensitive inland alternatives become feasible. The Draft Scoping Report therefore fails to properly distinguish between alternatives analysis and impact mitigation, resulting in a procedurally flawed and artificially constrained assessment of alternatives.

183. A central contradiction in the Draft Scoping Report is that both Thyspunt and Bantamsklip were historically selected precisely because they are coastal sites with direct access to large volumes of seawater for once-through cooling. The report itself repeatedly defines the plant heat sink around seawater cooling requirements of approximately 200 m^3/s, including major intake and outfall tunnel infrastructure extending offshore. The entire Nuclear Site Investigation Programme (NSIP), site selection process, marine engineering design, transmission planning, and environmental framing were therefore built around the assumption of coastal once-through cooling.

184. Against this background, presenting evaporative cooling towers or air-cooled systems as "alternatives" at this late stage is conceptually inconsistent and procedurally problematic. If cooling towers are truly technically and economically feasible for a nuclear facility of this scale, then the original justification for restricting the project to environmentally sensitive coastal sites is materially undermined.

185. The logic becomes circular:

    185.1. The sites were selected because they have access to seawater cooling.

    185.2. The environmental impacts of seawater cooling are now recognised as severe.

    185.3. Cooling towers are then introduced to mitigate those impacts.

186. But if cooling towers are feasible, the dependence on coastal siting falls away. This demonstrates that the so-called "cooling alternatives" are not independent project alternatives, but engineering responses aimed at making unsuitable sites appear acceptable.

187. The Draft Scoping Report itself reinforces this concern by structuring these options as comparative engineering configurations after the site selection process has effectively already narrowed the development envelope. Table 6-10 ("Comparison of cooling options") and the associated process flow diagrams for once-through and evaporative cooling are presented only after the project has already been geographically constrained to coastal nuclear precincts.

188. This is not how alternatives analysis should function under NEMA. Under the EIA framework, alternatives must:

- be reasonable and feasible;
- be capable of meeting the project need;
- meaningfully reduce environmental harm; and
- be considered before irreversible narrowing of project assumptions.

189. Mitigation measures, by contrast, are measures used to reduce impacts within a chosen development scenario. The cooling tower proposal clearly falls into the latter category because:

- it does not change the fundamental project footprint or site selection logic;
- it is introduced only after the coastal sites have already been prioritised;
- it attempts to reduce marine impacts arising from the original once-through cooling assumption; and
- it does not reopen the question of whether inland or less sensitive sites could become feasible if seawater dependence is removed.

190. The same criticism applies to many of the "design alternatives" presented in this section:

- intake tunnel configurations;
- outfall arrangements;
- spoil disposal approaches;
- footprint adjustments;
- transmission alignments; and

- cooling system refinements.

191. These are not true alternatives to the project or even to the selected sites. They are engineering optimisation measures within a predetermined project concept.

192. This distinction is critically important because NEMA requires the assessment of genuine alternatives before the mitigation hierarchy is applied. The mitigation hierarchy itself recognises:

- avoidance;
- minimisation;
- rehabilitation/restoration; and
- offsetting.

193. The Draft Scoping Report appears to collapse these stages by treating minimisation measures as if they are equivalent to alternatives analysis. That approach improperly narrows decision-making and risks creating a false impression that meaningful alternatives have been considered when, in reality, the project premise itself has not been critically tested.

194. A particularly important point is that once-through cooling is not a minor engineering detail, it is one of the defining characteristics of coastal nuclear site selection. The environmental consequences associated with this choice are massive and include:

- marine thermal pollution;
- entrainment and impingement of marine organisms;
- offshore tunnelling impacts;
- spoil generation and disposal;
- shoreline and sediment transport disruption; and
- long-term cumulative oceanographic impacts.

195. The report acknowledges major intake and outfall tunnel systems extending offshore, together with millions of cubic metres of spoil generation. If cooling towers materially reduce reliance on these systems, then the entire rationale for the selected coastal sites should be reopened and reassessed from first principles.

6.9 Cooling Water Intake and Discharge Options

196. The "Cooling Water Intake and Discharge Options" presented in the Draft Scoping Report do not constitute genuine alternatives assessment as

contemplated under NEMA. These options are derived from engineering and safety assumptions embedded within prior Site Safety Reports prepared for the National Nuclear Regulator and are framed as refinements to an already predetermined coastal nuclear development model.

197. The assessment therefore focuses primarily on engineering mitigation and optimisation of impacts associated with marine cooling infrastructure, rather than objectively evaluating whether fundamentally different and less environmentally damaging alternatives exist. Variations in intake tunnel alignments, discharge arrangements, and cooling configurations are mitigation measures within the same project concept and cannot substitute for a proper alternatives assessment.

198. The DSR consequently reflects an artificially constrained alternatives process driven by pre-existing nuclear engineering assumptions rather than an independent environmental assessment of reasonable and feasible alternatives.

199. The report expressly links these intake and discharge configurations to the Plant Parameter Envelope and supporting nuclear engineering design basis derived from prior technical and safety investigations, including the Site Safety Reports (SSRs) prepared for the National Nuclear Regulator (NNR). The intake and outfall systems are already defined within a narrow engineering envelope involving:

- offshore intake tunnels extending 1 000–2 000 m offshore;
- multiple intake tunnels with diameters of 5–10 m;
- offshore outfall tunnels;
- recirculated thermal discharge parameters; and
- a maximum temperature increase threshold linked to operational reactor assumptions.

200. The Draft Scoping Report therefore does not approach cooling infrastructure as an open alternatives assessment exercise. Instead, it starts from the premise that the coastal sites are already acceptable for nuclear development, the marine intake/discharge system is already fundamentally required, and the engineering task is simply to optimise or mitigate impacts associated with that pre-selected approach.

201. This is evident from Figure 6-16 (“Indicative range of intake and discharge infrastructure options available for the selected sites”) which explicitly frames the options within “the selected sites.” The alternatives are therefore not independent project alternatives, but variations of the same engineering solution already embedded in the SSR-driven reactor safety and operational assumptions. This is a critical distinction.

202. A Site Safety Report (SSR) prepared for the NNR serves a fundamentally different purpose from an EIA alternatives assessment under NEMA:

203. The SSR is intended to demonstrate nuclear engineering and operational safety for a selected site and reactor envelope.

204. An EIA, by contrast, must objectively test whether the project, location, technology, or infrastructure assumptions are environmentally justifiable in the first place.

205. By importing SSR-based engineering assumptions directly into the alternatives analysis, the Draft Scoping Report effectively reverses the proper decision-making sequence.

206. Instead of:

- first testing environmentally reasonable and feasible alternatives;
- then selecting the least damaging option;
- then refining engineering design,

the DSR appears to:

- assume a preferred nuclear engineering configuration;
- assume coastal once-through cooling requirements;
- assume offshore intake/discharge systems;

and then merely compare engineering permutations of those systems. This is mitigation-centred design optimisation, not alternatives assessment.

207. The problem becomes even more pronounced because the cooling intake and discharge systems are among the most environmentally consequential aspects of the entire project. They directly drive:

- offshore tunnelling requirements;
- dredging and blasting;
- spoil generation and disposal;
- marine habitat disturbance;
- thermal plume impacts;
- entrainment and impingement risks;
- sediment transport disruption;
- shoreline change risks; and
- cumulative marine ecological impacts.

208. The report itself identifies millions of cubic metres of spoil associated with the project. Yet the “alternatives” presented do not meaningfully interrogate

whether these impacts could be avoided altogether through fundamentally different project concepts, locations, scales, or cooling strategies considered at the outset of the process.

209. Instead, the alternatives remain trapped within the SSR-derived assumption that large coastal nuclear reactors with marine cooling infrastructure are the baseline development model.

210. We therefore argue that the alternatives assessment has been artificially constrained by pre-existing nuclear licensing and engineering processes.

211. Simply put the NNR safety framework appears to be driving the environmental alternatives process, rather than the environmental assessment independently interrogating whether those engineering assumptions are environmentally defensible.

212. This is particularly problematic under NEMA because environmental assessment must not become subordinate to engineering optimisation. The EIA process exists precisely to challenge underlying project assumptions where those assumptions create unacceptable environmental risk.

213. The cooling water intake and discharge section therefore demonstrates several procedural concerns:

213.1. Predetermined engineering framing
The alternatives are framed within pre-selected coastal nuclear development assumptions inherited from SSR and NSIP processes.

213.2. Conflation of mitigation and alternatives
Different intake layouts, discharge methods, and cooling refinements are presented as "alternatives" when they are impact reduction/mitigation measures for the same project concept.

213.3. Failure to assess avoidance alternatives
The DSR does not adequately examine whether different cooling technologies, reactor scales, inland siting, or alternative energy configurations could avoid the marine impacts entirely.

213.4. **Artificial narrowing of "alternatives"**
By limiting assessment to engineering permutations of marine cooling infrastructure, the DSR excludes broader environmentally preferable alternatives from meaningful consideration.

213.5. Regulatory inversion
The environmental process appears constrained by nuclear engineering and licensing assumptions rather than independently evaluating whether those assumptions are environmentally acceptable.

6.4 Dredging Activities, Excavation and associated Spoil Disposal

214. The treatment of dredging activities, excavation methods, and spoil disposal within the Draft Scoping Report does not constitute a genuine alternatives assessment under NEMA but rather reflects engineering mitigation and implementation measures arising from an already predetermined coastal nuclear development model.

215. The DSR assumes the necessity of offshore intake and outfall tunnels, extensive marine excavation, and millions of cubic metres of spoil generation as fixed project parameters. The subsequent comparison of spoil disposal methods or dredging configurations therefore relates only to how impacts will be managed, not whether those impacts could reasonably be avoided through fundamentally different project concepts, cooling technologies, siting approaches, or energy alternatives.

216. These measures fall within the mitigation hierarchy and cannot substitute for the legally required assessment of reasonable and feasible alternatives.

217. The DSR already assumes:

- large offshore intake and outfall tunnels;
- major marine excavation works;
- extensive bulk earthworks;
- massive spoil generation;
- and associated spoil management requirements.

218. The project description itself quantifies enormous spoil volumes:

218.1. Thyspunt: approximately 6.37 million m^3 of sand spoil and 708 356 m^3 of rock stockpile;

218.2. Bantamsklip: approximately 10.07 million m^3 of sand spoil and 1.2 million m^3 of rock stockpile.

219. These spoil volumes are not incidental impacts, they are direct consequences of the selected project concept, namely a large coastal nuclear facility dependent on marine cooling infrastructure requiring offshore tunnelling and extensive excavation in highly sensitive coastal systems.

220. Against this background, presenting different spoil disposal methods or dredging approaches as “alternatives” is procedurally misleading because the environmental harm has already been locked in by the earlier engineering assumptions.

221. The real environmental question should be whether a project requiring millions of cubic metres of spoil generation in sensitive coastal systems is environmentally justifiable in the first place?

222. Instead, the DSR narrows the discussion to:

- where spoil should go;
- how spoil should be handled;
- whether spoil should be disposed offshore or on land;
- and how excavation impacts can be reduced.

223. Those are mitigation and implementation questions, not alternatives analysis.

224. A true alternative would involve:

- avoiding the need for large-scale dredging altogether;
- avoiding offshore tunnelling;
- avoiding spoil generation at this scale;
- or assessing fundamentally different project configurations, cooling systems, locations, technologies, or energy strategies.

225. By contrast, spoil disposal options merely attempt to manage impacts after the core project concept has already been accepted.

226. The DSR therefore improperly confuses: "How should the impacts be managed?" with "Are there reasonable and feasible alternatives that avoid these impacts?"

227. This becomes even more problematic because spoil disposal itself may create additional major impacts including:

- marine ecosystem disturbance;
- sediment plume impacts;
- coastal process disruption;
- shoreline instability;
- benthic habitat destruction;
- groundwater impacts;
- dune destabilisation;
- cumulative marine impacts; and
- long-term geomorphological alteration.

228. The FEIR-era studies previously identified spoil disposal as a potentially very high significance impact, particularly in relation to oceanographic and marine ecological systems. Yet the current scoping approach appears to assume spoil generation as unavoidable and then merely compares management responses. That is classic mitigation hierarchy reasoning not alternatives assessment.

229. The wording and structure of the DSR reinforce this concern because dredging and spoil disposal are framed as downstream engineering consequences of:

- the selected sites;
- the chosen cooling systems;
- and the assumed intake/discharge tunnel infrastructure.

230. In other words, the project first assumes coastal nuclear development then assumes marine cooling then assumes offshore tunnels, then assumes excavation and spoil generation and only afterwards discusses "alternatives" for spoil handling.

231. This is a sequential engineering optimisation process, not an objective environmental alternatives assessment.

232. The DSR artificially narrows the alternatives space and then presents mitigation responses as though they satisfy the legal obligation to assess alternatives under NEMA.

NO-GO Alternative

233. The "No-Go" alternative presented on pages 213–216 of the Draft Scoping Report is fundamentally flawed.

233.1. It assumes that there if Nuclear-2 is not constructed, South Africa will lose out on the provision of sustainable, reliable and affordable baseload power, the contribution of coal to power generation would not be reduced, and there would be no reduction in transmission line losses. In fact, the most likely outcome is that the requisite electricity would be generated from renewable energy sources because that would meet the demand far more quickly and cheaply than nuclear power, and a manner that poses less risk to the environment, creates more jobs, and avoids burdening the economy with an enormous debt. The DSR must provide for appropriate specialist studies that evaluate this option.

233.2. It is based on a speculative and exaggerated assumption of future ecological degradation, while failing to properly account for the current

legal, conservation, planning and social realities applicable to the Thyspunt landscape. Instead of presenting a balanced assessment of what is reasonably foreseeable under a No-Go scenario, the report constructs a narrative that the landscape will inevitably deteriorate unless Eskom develops and manages the area. This framing is neither objective nor defensible under NEMA principles.

234. Crucially, the Draft Scoping Report fails to acknowledge that any future large-scale coastal development would today be subject to stringent environmental controls, including:
    - NEMA and the EIA Regulations;
    - Critical Biodiversity Area (CBA) constraints;
    - SPLUMA and municipal Spatial Development Frameworks;
    - Protected Areas legislation;
    - Freshwater and wetland protections under the National Water Act;
    - Heritage protections under the National Heritage Resources Act.

235. The report presents no evidence demonstrating that these legal and planning instruments would permit large-scale urban expansion across the Thyspunt coastal landscape. In the absence of such evidence, the assumption that the No-Go alternative would inevitably result in landscape degradation is speculative and irrational.

236. The No-Go scenario also ignores the very strong and well-documented history of public opposition to large-scale industrialisation of the Thyspunt coastline. For decades, local communities, environmental organisations, scientists and conservation groups have consistently opposed proposals that threaten the ecological and heritage integrity of the area. The current conservation trajectory of the region demonstrates that the dominant land-use pressure is not increasing industrialisation, but rather expanding conservation protection.

237. The Draft Scoping Report further attempts to suggest that Eskom ownership and management of the site could produce superior conservation outcomes compared to the No-Go scenario. This argument is deeply problematic because it treats the destruction of an internationally significant landscape as acceptable if accompanied by offset-style management elsewhere on the property. The argument effectively reframes mitigation as a net-positive conservation outcome.

238. However, these claimed benefits are entirely conditional, speculative and unenforceable without guaranteed long-term funding, binding conservation commitments and perpetual management obligations. There is no evidence

that Eskom-managed conservation would outperform existing and expanding conservation mechanisms already operating in the region.

239. More importantly, the No-Go assessment fails to properly consider a legitimate and increasingly plausible alternative future for Thyspunt through formal national-level conservation protection.

240. The No-Go assessment is therefore materially deficient because it:

240.1. Relies on speculative assumptions of future degradation unsupported by planning evidence;

240.2. Ignores the current strength of South African environmental legislation;

240.3. Fails to consider the demonstrated public resistance to industrial development in the area;

240.4. Disregards the expanding protected area network surrounding Thyspunt;

240.5. Treats conditional mitigation measures as conservation benefits;

240.6. Fails to evaluate conservation-led futures for the site;

240.7. Ignores the site's potential eligibility for national and international heritage recognition;

240.8. Misrepresents the baseline trajectory of the landscape.

241. Under NEMA, the No-Go alternative is required to provide a realistic benchmark against which the impacts of the proposed activity can be assessed. A No-Go scenario built on unsupported assumptions of inevitable degradation is not an objective assessment, it is narrative framing designed to artificially elevate the perceived benefits of the proposed development.

242. The current No-Go scenario is therefore not scientifically robust, not policy-neutral, and not legally defensible. A legally compliant no-go assessment must assess the most probable future land use and conservation trajectory for the Thyspunt site under the full suite of current legal planning instruments already identified at paragraph 221 above — specifically NEMA's EIA Regulations, Critical Biodiversity Area designations under the Eastern Cape Biodiversity Sector Plan, SPLUMA and the Kouga Local Municipality Spatial Development Framework, freshwater and wetland protections under the National Water Act, and heritage protections under the NHRA. The assessment must demonstrate on the basis of planning evidence what development would in fact be permissible at Thyspunt in the absence of the proposed NPP. A narrative that assumes inevitable degradation without engaging these legal instruments is not a no-go assessment — it is advocacy for the proposed development."

243. It is nearly impossible to comment on the various no-go considerations from the scoping phase specialist reports, as reflected in the DSR. Most of the details are non-sensical and do not refer to the No-Go alternative assessment but rather to no-go areas on the site when development commences. See for example the following extracts for the DSR:

6.4.7.3 Fauna and Invertebrates
For both sites, there is an Endangered Wildlife Trust (EWT) no-go area that the road area overlaps with for a plant species.
The report further highlights a mitigation measure that states "areas other than the footprint areas and existing surface infrastructure areas, should be declared as 'no-go' areas to vehicles (only). All essential operational staff – machinery must be limited to development area (no need to go outside the authorised area)".

6.4.7.4 Flora
Restricting development to the smallest feasible footprint and avoiding sensitive habitats such as wetlands, freshwater seeps, mobile dunes, dense thicket and dune forest. Maintain ecological corridors and buffers, particularly coastal–inland linkages, to preserve habitat connectivity and ecological function. Rehabilitate temporarily disturbed areas using locally indigenous species.

Mitigation report request during EIA phase:

244. We request that a complete Mitigation Measures Report inclusive of all the costs related to the various suggested mitigation measures be included in the EIA and that this report is also used as part of the Economic Impact Assessment.

Issues identified for investigation during the environmental impact assessment (EIA) phase

245. We request that the Final Scoping Report clearly include the following issues as per the included appendixes for detailed investigation during the EIA phase, together with the methodologies, specialist scopes of work, baseline studies, modelling requirements, and cumulative assessment approaches that will be utilised.

246. We reserve the right to expand upon these issues and submit detailed specialist-specific comments during subsequent phases of the process.

PLAN OF STUDY AND PROPOSED SPECIALIST STUDIES

247. The Plan of Study and proposed specialist studies must be revised to address all the omissions identified in these comments and in those incorporated by reference (i.e. the submissions of Thyspunt experts and the submissions, comments, objections, and supporting documents submitted by members of the Thyspunt Alliance during the public participation process). We highlight below some particularly important changes that must be made to the Plan of Study in the Scoping Report.

248. The Plan of Study must be based on a proper description of the Project which does not exclude essential elements of the Project and impose artificial limit on its geographical scope, and which identifies the specific types of NPP that may be constructed, as alternatives for assessment evaluation.

249. The Plan of Study must include a full assessment of all reasonable and feasible alternatives. This includes inland sites, Bantamsklip, Coega and renewables-based systems.

250. The consideration of renewable energy as an alternative is essential for a proper determination of the need and desirability of the Project, the best practicable environmental option and of the environmental and socio-economic consequences of not granting an environmental authorisation for Nuclear-2.

251. The Plan of Study must also provide for the undertaking of the specialist studies necessary to enable the competent authority to have regard to, and make a properly informed decision on the factors referred to in section 63 of NEM:ICMA;

252. The Plan of Study in the final Scoping Report must specifically incorporate, as named specialist study scopes, each of the investigations that WSP's own specialist studies explicitly deferred to the EIA phase. Those deferred investigations are documented discipline by discipline in the following appendices to this submission:

- *Appendix 1: Dune Geomorphology*
- *Appendix 2: Marine Ecology*
- *Appendix 3: Oceanography*
- *Appendix 4: Socio-Economic*
- *Appendix 5: Spoil Disposal on Land*
- *Appendix 6: Tunnel Infrastructure*
- *Appendix 7: Geohydrology*

- *Appendix 8: Freshwater Ecology*
- *Appendix 9: Access Roads*
- *Appendix 10: Biodiversity*

253. The cumulative impact assessment required by NEMA section 2(4)(vii) must cover the full integrated development footprint. This includes the permanent transmission network, the construction village and workforce accommodation, all access road upgrades and new alignments, spoil disposal sites both onshore and offshore, marine infrastructure including all intake and outfall tunnel corridors, and all other currently excluded associated infrastructure identified in this submission and its appendices. An assessment confined to the on-site NPP boundary does not constitute a cumulative impact assessment under NEMA. The Plan of Study must define the geographic scope, the time horizon spanning the full operational and decommissioning lifecycle, and the methodology of the cumulative assessment before the EIA phase commences.

FLAWED PUBLIC PARTICIPATION PROCESS

Time constraints and restricted access to relevant information

254. The public participation process undertaken for the DSR has been flawed and inconsistent with the requirements for meaningful public participation contemplated under NEMA and the EIA Regulations, 2014.

255. The DSR was released on 1 April 2026 with an original closing date for comments of 5 May 2026. This afforded Interested and Affected Parties ("I&APs") barely more than 30 days to review an exceptionally large and technically complex body of documentation consisting of thousands of pages spread across numerous specialist studies and appendices.

256. Compounding the already unreasonable timeframe were serious accessibility problems relating to the supporting documentation on the WSP website. On 8 April 2026, WSP was formally notified that several appendix files could not be accessed or opened via both the project website and the so-called "free data" website. The following concerns were specifically raised with WSP:

"We would like to bring to your attention that several of the relevant appendix files are currently not accessible. These files cannot be opened on either the project website or the free data site. This is significantly hampering our ability to properly review the material and compile informed comments.

Given the already very tight timeframes provided for submissions, these technical issues place us at a clear disadvantage. Until such time as full and

reliable access to all supporting documentation is rectified, we believe it would be reasonable and necessary to consider an extension to the commenting period.

In addition, it is problematic that the appendices on the free data site are not clearly named or labelled. This makes navigation and cross-referencing extremely difficult, further compounding the challenge of conducting a thorough review.

We kindly request that:

- *The accessibility issues be resolved as a matter of urgency;*
- *The appendices be clearly named and organised on the free data site; and*
- *An extension to the comment period be granted to allow stakeholders sufficient time to engage meaningfully with the full set of documents*."

257. Rather than acknowledging the seriousness of these concerns, WSP responded on 9 April 2026 indicating that they could not identify any issue with the system. A further response was submitted on the same day clarifying that the issue was not whether files could technically be downloaded, but rather that the downloaded files could not be opened or used. It was specifically stated:

"We have checked the issues with three different sources – you can download the file, but it will not open. Whilst I appreciate the OneDrive file, this is not a solution for majority of I&AP's."

258. WSP responded on 10 April 2026 stating that the websites had been tested and verified as functional by the Environmental Assessment Practitioner ("EAP") and "multiple external users." WSP confirmed that the appendices on the data-free website had been renamed to improve navigation and alignment with the main WSP website.

259. WSP's own response effectively constitutes an admission that the naming and organisation of appendices on the data-free website were inadequate during a material portion of the public review period, necessitating subsequent correction. This is particularly important given the enormous volume and technical complexity of the documentation. Proper naming, indexing, and cross-referencing of appendices is not an administrative luxury it is fundamental to meaningful participation.

260. The technical issue with the documents were only resolved on 13 April when Appendix G13 and G14 was split into two parts on the WSP website. We confirmed this in an email to WSP and again raised the issue of the short comment period:

"..we believe it would be both reasonable and procedurally fair to consider an extension of the Public Participation Process to ensure that all stakeholders are afforded a genuine opportunity to engage with the information provided."

261. The use of private OneDrive links as an alternative compromise both the integrity and fairness of the public participation process. Access to essential environmental information should remain independent of private communication with the EAP. Many I&APs depend on the data-free website due to bandwidth constraints, financial limitations, or restricted digital resources. Employing informal distribution methods results in unequal access to information and puts certain stakeholders at a procedural disadvantage.

262. Although some users were able to access the documentation, ongoing complaints about inaccessible or corrupted files should have prompted the EAP to take precautionary and equitable action such as formally suspending or extending the public review period until dependable access was both restored and independently confirmed. However, stakeholders were required to continue reviewing thousands of pages of technical material while simultaneously trying to resolve issues with accessing the documents.

263. Meaningful participation requires not merely theoretical access to documents, but practical, reliable, and equitable access allowing sufficient time for proper interrogation of the information.

Barriers created by excessive volume and technical complexity

264. The size and structure of the DSR, and the inclusion of EIA level materials, make it difficult for ordinary stakeholders to identify the key issues and impacts at scoping stage, thereby impairing meaningful participation.

Non disclosure of key documents

265. The Site Safety Report ("**SSR**") prepared by Eskom in 2025 was not included as part of the Draft Scoping Report documentation made available to the public, despite numerous references to the SSR throughout the specialist scoping studies and the main report. By withholding the SSR and related safety and engineering documentation, the DSR prevents participants from understanding how safety assumptions constrain project design and alternatives, and hence from commenting effectively on issue identification and scoping adequacy. It must be made available to I&APs as soon as possible.

Requests for extensions

266. There was additional concern regarding the EAP's reluctance to grant a reasonable extension, despite multiple requests from stakeholders. The first extension, issued on 24 April 2026, allowed the commenting period to continue until 25 May 2026. A second extension was approved on 19 May 2026, extending the process further to 29 May 2026. The need for repeated extensions highlights that the initial public participation timeframe was insufficient for a project of this scale, complexity, and national importance.

267. It is troubling that many Key Focus Group meetings and online public participation sessions were arranged only after the original deadline for comments had ended. Additionally, more Key Focus Group meetings are said to be planned until Friday, 29 May 2026, meaning stakeholder engagement will continue right up to the last day of the extended public participation period.

268. Despite the importance of these engagements, minutes of the various meetings have not been made available to I&APs. Instead, only recordings of some meetings have been uploaded to the website. This places an unreasonable burden on stakeholders and does not allow I&APs to efficiently identify, analyse, or respond to key issues raised during these engagements. The absence of written minutes limits the ability of stakeholders to provide informed and meaningful comments, particularly where complex technical, scientific, or procedural matters are discussed.

Public meetings

269. There are also issues related to how the public meetings were held. Much of the presentations centred on policy, procedural matters, timelines, nuclear reactor components, nuclear waste and repeated references to a "technology neutral EIA." The presentations provided limited substantive explanation of the findings presented in the specialist scoping reports.

270. Although numerous specialist studies were listed, there was little substantive discussion of:

- environmental sensitivities,
- cumulative impacts,
- scientific uncertainties,
- key risks, e.g. the loss of squid fishing grounds; or
- the potentially significant impacts associated with the proposed development.

271. Issues such as spoil disposal, marine impacts, groundwater vulnerability, biodiversity loss, freshwater ecosystem impacts, evacuation constraints, and cumulative infrastructure impacts were not adequately explained to the public. Instead, the overall tone of the meetings appeared focused on normalising and motivating for the Thyspunt Nuclear Power Station proposal itself, rather than critically presenting the environmental implications of the project.

272. Meaningful public participation under NEMA requires more than the publication of documents and the hosting of meetings. It requires that affected communities are placed in a position where they can reasonably understand the likely impacts, risks, uncertainties, and environmental implications of the proposed activity.

273. The capacity and ability of I&APs to engage efficiently and meaningfully in the scoping process was significantly impaired by the cumulative impact of:

- inaccessible or poorly organised documentation,
- evolving document structures during the review period,
- constrained timelines,
- repeated requests for extensions,
- continued stakeholder engagements after the original closing date,
- lack of written meeting minutes; and
- inadequately informative public meetings,

274. We record that we do not consider the public participation process to date to have complied with the legal requirement to enable and facilitate inclusive and effective public participation.

275. We request that any specialist reports that are included in the draft EIA Report indicate where they depart from the findings and recommendations of the specialist reports that formed part of the FEIAR for Nuclear-1, and the reasons for those departures in order to enable I&APs to evaluate and comment on those reports.

CONCLUSIONS

276. For the reasons set out in this document, our view is that the DSR requires very extensive revision and expansion before it is finalised as a scoping report. The requisite revisions are so extensive that the EAP should circulate a second DSR for public comment. Specialist reports can be omitted from that DSR as we will comment on them during the EIA phase.

277. The Thyspunt Alliance has conducted a comprehensive review of DSR and associated specialist studies. In our view the DSR does not substantially comply with the requirements of Appendix 2 to the Environmental Impact Assessment Regulations 2014, as required by regulation 21(3). For example, the DSR describes the Project too vaguely and too narrowly, fails to adequately identify and characterise potentially significant impacts, fails to assess reasonable and feasible alternatives on an objective basis, fails to motivate need and desirability in a manner that enables informed decision-making, and produces a Plan of Study that does not provide a sufficient basis for the EIA phase. These failures are not individually correctable through minor revision — they are systemic, and they reflect a process that has conflated the scoping and EIA phases in a manner that has impaired meaningful public participation and predetermined outcomes that should only follow from independent assessment.

278. For the above reasons, we submit that the DSR must be substantially revised and then the revised DSR must be advertised and subjected to a public participation process before the Scoping Report is finalized and submitted to the competent authority for approval. Specialist reports can be omitted from the revised DSR as we will comment on them during the EIA phase. However, any specialist reports that are included, either in the revised DSR or the draft environmental impact assessment report during the EIA phase, must indicate where they depart from the findings of the Nuclear-1 FEIAR specialist reports and provide reasons for those departures in order to facilitate public engagement and comment.

279. Prior to circulating the revised DSR, the Site Safety Report ("SSR") prepared by Eskom in 2025 must be provided to I&APs.

280. Unless the defects identified in these comments are rectified in the Scoping Report, the Thyspunt Alliance will make submissions to the competent authority motivating for it to refuse to approve the Scoping Report.

281. The Thyspunt Alliance expressly reserves all rights to supplement, amend, and expand these submissions during the EIA phase. Participation in this scoping process and submission of these comments does not constitute acceptance of the adequacy, legality, procedural fairness, scientific integrity, or substantive lawfulness of the DSR, the associated specialist studies, the site selection methodology, or the broader S&EIR process. All rights to challenge the FSR, the EIA Report, and any Environmental Authorisation that may follow — including by way of appeal, review, or judicial proceedings — are expressly reserved.

Appendixes:

1. Dune Geomorphology
2. Marine Ecology
3. Oceanography
4. Socio Economic
5. Spoil disposal on land
6. Tunnel Infrastructure
7. Geohydrology
8. Fresh Water Ecology
9. Access Roads
10. Biodiversity
11. Energy

Appendix 1 Dune Geomorphology

The Dune Geomorphology Scoping Report recognises the presence of groundwater, interdune ponds, and occasional river flows. However, it does not sufficiently evaluate how episodic fluvial processes, sediment transport during floods, or interactions between wind-driven and water-driven forces shape the eastern Oyster Bay dunefield. As a result, the report does not properly address the geomorphological risks that could threaten infrastructure, even though Ellery and colleagues provided substantial field evidence on these issues in 2012.
Elkington, L., 2012. Morphology, patterns and processes in the Oyster Bay headland bypass dune system.

The shortcomings found during the Scoping Phase go beyond just needing more detail, they are significant gaps in how geomorphological processes, hydrological interactions, and infrastructure risk pathways are understood within the Oyster Bay Headland Bypass Dunefield system. These deficiencies must therefore be rectified comprehensively during the EIA phase. The EIA cannot rely solely on remote sensing and historic aerial imagery.

The EIA phase for the Dune Geomorphology assessment must explicitly incorporate and evaluate the findings of the peer-reviewed study "Hydrogeological Characterization of the Thyspunt Area, Eastern Cape Province, South Africa" by Mohuba, et al.(2020). The study provides directly relevant scientific evidence regarding groundwater behaviour, hydrogeological connectivity, groundwater discharge dynamics and subsurface conditions within the Thyspunt dune system. These findings are materially relevant to understanding interdune groundwater interactions, dune slack formation, episodic saturation, sediment mobilisation pathways and the potential interaction between groundwater and geomorphological instability processes within the Oyster Bay Headland Bypass Dunefield system.

Given the unresolved scientific disagreement identified during the Scoping Phase regarding the role of episodic water-driven processes, groundwater dynamics and aeolian–fluvial interactions in structuring the eastern dunefield, the EIA phase must demonstrate explicitly how the findings of the Mohuba et al. study have been integrated into:

- the conceptual geomorphological model,
- baseline hydro-geomorphological characterisation,
- flood and debris-flow risk assessment,
- groundwater-driven slope instability analysis,
- sediment transport assessment,
- climate resilience modelling,
- and infrastructure vulnerability assessment.

The EIA should not proceed based on a predominantly aeolian conceptual model without fully evaluating available hydrogeological evidence relevant to groundwater-driven geomorphic processes. Failure to incorporate all relevant scientific studies would constitute a failure to consider relevant scientific information and would be inconsistent with the precautionary and risk-averse principles contained in Section 2 of NEMA.

The following investigations and assessments should explicitly be required as part of the EIA phase:

Integrated Aeolian–Fluvial Geomorphological Assessment

The EIA must move beyond the current predominantly wind-driven conceptual model and undertake a fully integrated assessment including field studies of:

- aeolian processes,
- fluvial processes,
- groundwater interactions,
- episodic flood dynamics,
- sediment mobilisation pathways,
- dune collapse and slope instability processes.

This assessment must specifically evaluate whether the eastern Oyster Bay dunefield is substantially structured by episodic water-driven geomorphic processes.

Flood Geomorphology Hazard Assessment

A dedicated specialist assessment must be undertaken for:

- flood geomorphology,
- debris-flow initiation potential,
- sediment liquefaction,
- dune slope instability,
- floodplain erosion,
- episodic sediment transport events.

This assessment must include:

- field verification,
- sedimentological analysis,
- mapping of historic flood deposits,
- recurrence interval analysis,
- climate-change influenced extreme rainfall modelling.

Infrastructure Vulnerability Assessment

The EIA must include a full infrastructure vulnerability assessment for:

- access roads,
- transmission corridors,
- bridges,
- culverts,
- stormwater infrastructure,
- construction laydown areas,
- spoil stockpiles,
- emergency evacuation routes.

This assessment must evaluate:

- erosion risk,
- flood undermining,
- sediment burial,

- channel avulsion,
- dune migration,
- slope failure,
- infrastructure isolation during flood events.
- Special emphasis must be placed on:

o Any proposed new road infrastructure, fence and powerline infrastructure.
o emergency access reliability during extreme weather events.

Elkington, L., 2012. Morphology, patterns and processes in the Oyster Bay headland bypass dune system.

Seeke C. Mohuba et al., 2020. Hydrogeological Characterisation of the Thyspunt Area, Eastern Cape Province, South Africa.

Appendix 2 Marine Ecology

Spoil dumping:

The Marine Ecology Scoping Report acknowledges that offshore spoil disposal may have "Very High" impacts on the chokka squid fishery, yet fails to define disposal sites, sediment plume behaviour, hydrodynamic transport pathways, spoil composition, long-term redistribution patterns, or cumulative marine ecological impacts. The report therefore identifies spoil disposal as a major risk while simultaneously failing to scope the actual marine consequences of disposing approximately 7 million cubic metres of excavated material into a highly sensitive marine environment.

The EIR must include:
Detailed Marine Engineering Design Assessment

- final intake and outfall alignments,
- precise offshore coordinates,
- tunnel construction methodologies,
- excavation footprints,
- shaft locations,
- cofferdam designs,
- diffuser designs,
- seabed disturbance areas,
- marine construction sequencing,
- vessel anchoring requirements,
- dredging requirements,
- dewatering methods,
- spoil handling methodologies.

Full Hydrodynamic Modelling
This is essential because the Scoping Report itself acknowledges dynamic sediment systems and highly sensitive fisheries.

The EIR must include:

- nearshore circulation modelling,
- current interaction modelling,
- wave-current interaction modelling,
- storm event modelling,
- sediment transport modelling,
- longshore drift modelling,
- sediment plume modelling,
- thermal plume modelling,
- cumulative plume interaction modelling,
- seasonal variability modelling.

Detailed Offshore Spoil Disposal Assessment
The Scoping Report identifies spoil disposal as a potentially "Very High" impact but does not properly assess it.

The EIR must therefore include:

- Spoil characterisation
- grain size analysis,
- geochemical analysis,
- contaminant mobilisation potential,
- oxygen depletion potential,
- sediment compatibility analysis,
- suitability for beach nourishment.
- Disposal site assessment
- exact disposal locations,
- seabed habitat mapping,
- benthic community surveys,
- disposal mound modelling,
- sediment redistribution modelling,
- resuspension modelling,
- cumulative disposal modelling.

Comprehensive Squid Spawning Impact Assessment

The report itself acknowledges squid sensitivity to turbidity and sediment.

The EIR must include:

- fine-scale squid spawning habitat mapping,
- spawning season variability,
- egg bed mapping,
- larval dispersal modelling,
- turbidity tolerance thresholds,
- sediment deposition thresholds,
- fishery displacement analysis,
- cumulative fisheries impacts,
- economic impact modelling on the squid industry,
- long-term productivity impacts.

Full Intake Entrainment and Impingement Studies
Currently almost absent. This is very important given the enormous cooling water volumes proposed.
The EIR must include:

- entrainment modelling,
- impingement modelling,
- larval mortality assessment,
- ichthyoplankton surveys,

- plankton productivity impacts,
- fish mortality estimates,
- cumulative food web impacts,
- seasonal intake risk analysis.

Detailed Thermal Discharge Assessment
The Scoping Report admits thermal impacts are "of particular concern."
The EIR must include:

- calibrated thermal plume modelling,
- seasonal stratification analysis,
- mixing zone analysis,
- cumulative thermal loading,
- biological threshold exceedance analysis,
- ecosystem functioning impacts,
- thermal refuge impacts,
- oxygen reduction impacts,
- climate change interaction assessment.

Full Marine Biodiversity Surveys
The report explicitly states: "no subtidal surveys were conducted." This is a major scoping limitation.
The EIR must therefore include:

- subtidal habitat mapping,
- ROV surveys,
- benthic biodiversity surveys,
- reef mapping,
- sponge/coral assemblage surveys,
- marine mammal baseline studies,
- seabird foraging assessments,
- fish assemblage surveys,
- ecosystem functioning assessments.

Construction Impact Assessment
The EIR must assess:

- blasting impacts,
- underwater noise propagation,
- vibration impacts,
- pile driving impacts,
- vessel traffic impacts,
- anchoring damage,
- turbidity generation during construction,
- cofferdam impacts,
- temporary works impacts,
- cumulative construction impacts over time.

Cumulative Impact Assessment
The current cumulative assessment is weak and largely dismissive.
The EIR must assess cumulative interaction with:

- fisheries pressures,
- climate change,
- warming oceans,
- existing coastal developments,
- shipping,
- marine protected areas,
- squid fishery pressures,
- sediment system changes,

Climate Change and Sea-Level Rise Assessment
The EIR must include:

- future coastal erosion modelling,
- sea-level rise interaction,
- storm surge modelling,
- coastal instability risks,
- climate resilience analysis,
- long-term shoreline evolution.

Independent Fisheries and Socioeconomic Assessment
The squid industry implications alone require:

- economic valuation,
- job impact assessment,
- fisheries displacement analysis,
- small-scale fisheries impacts,
- cumulative livelihood risks,
- long-term regional economic effects.

Regulatory Compliance Assessment
The EIR must specifically address:

- compliance with DEA 2014 coastal discharge guidelines,
- "exceptional circumstances" justification for once-through cooling,
- MLRA compliance,
- ICMA consistency,
- Marine Spatial Planning conflicts,
- Critical Biodiversity Area impacts,
- IFC Performance Standard compliance.

Appendix 3 Oceanography

The current Scoping Report repeatedly defers critical oceanographic investigations to the future EIA phase, while simultaneously advancing comparative site suitability conclusions.

The Scoping Report acknowledges that dredging and spoil disposal assessments "have been undertaken to a reasonable due diligence" level, but that spoil disposal "*may need to be repeated*" during EIA. The consultants are effectively acknowledging that spoil disposal is among the most significant marine impacts of the project, and we therefore argue that the modelling of spoil disposal impacts **MUST** be done.

Full regional sediment budget modelling
The EIA should include:

- regional-scale sediment transport modelling,
- cross-shore and longshore coupling,
- dune-beach interaction,
- sediment source/sink analysis,
- shoreline rotation modelling,
- cumulative sediment budget disruption.

Detailed spoil disposal fate modelling
The EIA must assess:

- long-term spoil mound evolution,
- resuspension during storms,
- extreme-event redistribution,
- spoil grain-size compatibility,
- beach nourishment feasibility,
- cumulative impacts of possible maintenance dredging,
- secondary shoreline impacts,
- ecological smothering risks,
- turbidity persistence,
- regional sediment redistribution.

Dynamic shoreline evolution modelling
The EIA should include:

- probabilistic shoreline recession modelling,
- sea-level rise scenarios,
- 1:100 and 1:1000 storm events,
- infrastructure exposure timelines,
- dune rollback scenarios,
- wave-climate-driven shoreline rotation,
- threshold failure analysis.

The Draft Scoping Report identifies thermal plume dispersion and recirculation as potentially high-significance impacts, particularly at Thyspunt, yet relies on indicative infrastructure layouts and incomplete modelling while deferring critical site-specific hydrodynamic and thermal dispersion investigations to the EIA phase. As a result, the present evaluation does not sufficiently capture the real scope, duration, cumulative effects, or ecological outcomes of thermal plumes in the marine environment into which they are released.

The Scoping Report repeatedly states that detailed modelling still needs to occur, final discharge configurations are not fixed, and the project remains conceptual under the Plant Parameter Envelope approach. This is important because plume behaviour depends on exact intake/outfall depth, tunnel length, discharge velocity, diffuser design, local currents, wave climate, stratification, and seasonal upwelling. Yet many of these parameters are not finalised. The report specifically notes "*Based on an indicative discharge configuration…*" The wording is important because it means the impact conclusions are not based on final engineering, but on conceptual assumptions.

Site-specific thermal plume modelling
The EIA must include:

- fully defined intake/outfall designs,
- seasonal circulation modelling,
- upwelling interaction,
- recirculation risks,
- cumulative warming effects,
- ecological thermal thresholds,
- extreme low-dispersion scenarios.

Combined-event hazard modelling
The EIA should assess:

- tsunami + storm surge coincidence,
- wave run-up + sea-level rise,
- dune erosion + overtopping,
- intake blockage during storm events,
- sediment pulse events,
- infrastructure exposure during cascading failures.

Explicit uncertainty analysis

The EIA should therefore include:

- sensitivity analysis,
- worst-case modelling,
- confidence intervals,
- uncertainty propagation,
- scenario comparison,
- and model validation against historical coastal behaviour.

Appendix 4 Socio-Economic

While the Socio-Economic Scoping Study acknowledges several generic construction-phase risks such as labour influx, housing pressure and service strain, it fails to properly scope the deeper structural socio-economic transformation risks demonstrated by the Medupi/Lephalale experience.

The current study largely treats these impacts as temporary and manageable, rather than as potentially irreversible regional-scale governance, demographic, economic and social transformation processes requiring dedicated cumulative assessment, long-term modelling and institutional capacity analysis.

The Socio-Economic EIA must not treat employment and economic growth as automatic net benefits. The Medupi/Lephalale experience demonstrates that a mega-energy project can produce short-term growth while also causing labour influx, social conflict, service strain, unequal benefit distribution, increased living costs and long-term municipal burdens. These risks must be investigated before any positive socio-economic conclusions are drawn.

The EIA-phase Socio-Economic Impact Assessment must investigate the following, drawing specifically on the Medupi/Lephalale experience as a comparable South African mega-energy project:

1. **Labour influx and job-seeker migration**

Assess the likely number, timing, origin and settlement patterns of construction workers and job seekers; the risk of new informal settlements, these settlements becoming permanent, pressure on rental housing, and impacts on Cape St Francis, St Francis Bay, Humansdorp, Sea Vista, Oyster Bay and the greater Kouga region.

2. **Local employment realism**

Assess whether local labour actually has the required skills, what proportion of jobs will realistically go to local residents, what jobs will go to outsiders, and what happens when temporary construction jobs end.

3. **Skills mismatch and “unemployable locals”**

Investigate whether promised skills transfer can genuinely convert local unemployed residents into nuclear-construction workers, rather than creating expectations that cannot be met.

4. **Conflict, protest and community instability**

Assess the risk of social conflict arising from unmet job promises, unequal procurement, perceived exclusion, political patronage, labour disputes, transport contracts and benefit capture by outside contractors or elites.

5. **Housing, rentals and cost-of-living escalation**

Model impacts on rental prices, land values, food costs, transport costs and affordability for existing residents, including low-income households in Oyster Bay, Sea Vista and Humansdorp.

6. **Municipal service burden**

Quantify demand on water, sanitation, refuse removal, roads, emergency services and municipal administration. Lephalale shows that increased rates do not necessarily offset new expenditure burdens.

7. **Water and service-security trade-offs**

Specifically assess whether project-related growth could divert scarce water, infrastructure capacity and municipal planning attention away from existing community needs.

8. **Local procurement and benefit distribution**

Investigate who is likely to benefit: local SMMEs, outside contractors, politically connected entities, accommodation owners, transport operators, or large corporations. The study must include enforceable local procurement and transparency mechanisms.

9. **Tourism, fisheries and existing livelihoods**

Assess displacement or reputational impacts on tourism, fisheries, eco-tourism, recreation, property markets and sense of place, not only direct employment gains.

10. **Cumulative development effects**

Assess the combined effect of the NPP, transmission lines, roads, accommodation, security zones, emergency planning zones and other induced development.

11. **Corporate Social Investment adequacy**

Test whether Eskom's CSI/CSR commitments are adequate, enforceable and measurable, rather than being used as a substitute for real mitigation. The Lephalale study criticises CSR as inadequate to address deeper socio-economic and ecological harm.

12. **Post-construction decline risk**

Assess what happens after the construction peak: job losses, stranded accommodation, business closures, reduced spending, social instability and long-term dependency.

The EIA-phase Socio-Economic Impact Assessment must further include a comprehensive Institutional Capacity and Public Service Demand Assessment to evaluate the cumulative impact of the proposed development, associated labour influx and induced population growth on government and municipal services within the Kouga.

Additional investigations required during the EIA phase:

Education Capacity Assessment

Investigate:

- current capacity of schools, ECD facilities and TVET institutions;
- projected learner influx associated with construction and operational phases;
- teacher shortages;
- classroom overcrowding;
- school transport demand;
- impacts on education quality and access for existing communities.

Healthcare and Medical Services Assessment

Assess:

- existing capacity of hospitals, clinics, pharmacies and emergency medical services;

- increased demand associated with construction injuries, population influx, occupational health risks, communicable disease transmission, mental health pressures and long-term population growth;
- ambulance response times;
- trauma-care capacity;
- healthcare staffing constraints;
- cumulative pressure on provincial health infrastructure.

Emergency Services and Disaster Response Capacity
Investigate:
- fire and rescue capacity;
- ambulance and paramedic availability;
- disaster-management capability;
- hazardous-material response readiness;
- policing support during large-scale labour unrest or protest action;
- emergency evacuation logistics during peak construction and operational phases.

Traffic Enforcement and Licensing Capacity
Assess:
- impacts on traffic-law enforcement;
- road policing capacity;
- heavy-vehicle monitoring;
- driver testing centres;
- vehicle licensing services;
- freight and abnormal-load management;
- accident response capability;
- staffing and operational pressures on traffic departments.

Government Administrative Services Capacity
Investigate impacts on:
- Home Affairs services;
- ID and passport applications;
- social grant administration;
- labour offices;
- policing and justice systems;
- municipal customer services;
- public transport regulation;
- housing administration;
- indigent support systems.

Municipal Institutional Capacity Assessment
The EIA should evaluate whether local and district municipalities possess the:
- staffing,
- financial resources,
- governance systems,
- technical expertise,
- planning instruments,

- operational budgets,

necessary to manage rapid project-induced growth over the full life cycle of the development.

Boom-Bust Public Service Modelling

The study should assess:

- temporary versus permanent service demand;
- post-construction decline risks;
- stranded infrastructure;
- long-term municipal financial liabilities;
- dependency risks associated with a single mega-project economy.

Independent Fisheries and Socioeconomic Assessment

The squid industry implications alone require:

- economic valuation,
- job impact assessment,
- fisheries displacement analysis,
- small-scale fisheries impacts,
- cumulative livelihood risks,
- long-term regional economic effects.

The Scoping Study currently treats crime, safety and social conflict largely as secondary construction-management issues. However, international and South African mega-project experience demonstrates that rapid demographic change, labour influx, inequality and weak institutional capacity can fundamentally alter local social conditions and place severe long-term pressure on policing, justice and social-support systems. These risks require dedicated cumulative assessment during the EIA phase and cannot be deferred to generic mitigation measures or operational management plans.

The EIA-phase Socio-Economic Impact Assessment must include a comprehensive Institutional Capacity, Public Safety and Law Enforcement Assessment to evaluate the cumulative impacts of the proposed development, associated labour influx and induced population growth on policing, crime prevention, justice systems, emergency response services and broader government administrative capacity within the Kouga region.

Particular attention must be given to the lessons arising from large-scale South African mega-project developments such as Medupi/Lephalale, where rapid population growth, labour influx and socio-economic inequality contributed to increased social instability, pressure on policing systems, informal settlement growth, violent protest action, crime and institutional strain.

The current Scoping Study fails to adequately scope these institutional and governance-related risks.

Law Enforcement, Crime and Public Safety Investigations Required

The EIA-phase assessment must specifically investigate:

- existing South African Police Service (SAPS) capacity within the affected municipal and district areas;

- current police-to-population ratios and operational shortages;
- detective capacity;
- visible policing availability;
- rural and coastal policing limitations;
- emergency response times;
- marine and coastal law-enforcement capability;
- traffic policing and road-law enforcement capacity;
- correctional services and court-system pressures;
- impacts on Community Policing Forums and local safety structures.

The assessment must further evaluate the potential for project-induced increases in:

- violent crime;
- property crime;
- organised criminal activity;
- gang formation and gang expansion;
- illicit drug trade and substance abuse;
- prostitution and exploitation;
- gender-based violence (GBV);
- sexual harassment and assault;
- domestic violence;
- human trafficking risks;
- conflict between local communities and migrant labour populations;
- public disorder, protest action and labour unrest.

Special consideration should be given to the vulnerability of:

- women,
- children,
- seasonal workers,
- informal-settlement residents,
- isolated coastal communities,
- fishing communities,
- low-income households,
- and socially marginalised groups.

The assessment should also investigate:

Whether existing SAPS stations, specialised units and emergency-response services possess the operational capacity, staffing levels, infrastructure and budget necessary to absorb large-scale project-related population and activity increases.

Whether additional policing infrastructure, personnel and social-support services would be required and who would bear the long-term financial and operational responsibility for such expansion.

Appendix 5 Spoil and Disposal of Land

Spoil is explicitly quantified under "Civil Works – Spoil" in the project description.
The report provides volumes of material to be excavated and classified as spoil for both sites:
Thyspunt:
Sand to spoil: 6,372,044 m^3
Bantamsklip:
Sand to spoil: 10,073,273 m^3
These figures appear in the project description tables.

This confirms that massive volumes of spoil are anticipated and are a core part of the construction footprint. What the DSR does NOT do (at scoping level):

- No clear disposal strategy
- No confirmed location
- No assessment of disposal impacts. E.g. dune destabilisation, sediment transport, coastal erosion
- No cumulative impact analysis tied specifically to spoil volumes
- No linkage to marine dumping impacts or terrestrial spoil placement

The DSR quantifies spoil volumes but does not assess spoil disposal as an impact pathway. Without identifying disposal locations, methods, and associated impacts, the scoping process fails to meet NEMA requirements for identifying all potentially significant impacts.

Given the extraordinary spoil volumes proposed, on-land spoil disposal constitutes a major associated activity requiring independent specialist assessment. The EIA must therefore include detailed investigations into geomorphological stability, groundwater interaction, hydrological alteration, ecological impacts, sediment transport, rehabilitation feasibility, and cumulative landscape transformation associated with spoil disposal areas. The EIA must not treat spoil disposal as "temporary stockpiling" because volumes of this magnitude effectively constitute:

- a new landform
- a disturbance footprint
- a long-term environmental risk source

Dune Geomorphology
The EIA must investigate:

- Stability of spoil stockpiles under prevailing wind conditions
- Risk of remobilisation of sand into the active dune system
- Impacts on dune migration pathways
- Interruption of sediment supply pathways
- Changes to interdune hydrology
- Alteration of natural aeolian transport systems
- Long-term dune field evolution
- Storm erosion vulnerability
- Cumulative geomorphological impacts

Critically the study must model both, operational conditions and extreme weather events.

The EIA should include:

- numerical aeolian transport modelling
- terrain evolution modelling
- LiDAR-based topographic analysis

Geohydrology

The EIA must assess whether spoil disposal could:

- alter recharge to the TMG and Algoa aquifers
- interfere with groundwater flow pathways
- change groundwater quality
- impact spring discharge systems
- alter seepage into wetlands
- create perched water tables
- modify infiltration characteristics

This is especially important given the complex groundwater mixing systems identified by Mohuba et al. (2020) The EIA should therefore include groundwater flow modelling, hydrochemical investigations, spoil permeability testing and recharge-discharge interaction analysis.

Freshwater Ecology

The EIA must investigate:

- impacts to wetlands from altered hydrology
- sediment runoff into freshwater systems
- changes to ecological connectivity
- impacts to groundwater-dependent ecosystems
- alteration of seasonal water availability
- nutrient/sediment loading impacts

Hydrology / Surface Water

The EIA must assess:

- stormwater runoff from spoil areas
- erosion risk during extreme rainfall
- sediment transport into rivers/wetlands
- flood attenuation impacts
- changes to catchment hydrology
- The EIA should include:
- stormwater modelling
- sediment yield modelling
- extreme rainfall event analysis
- erosion risk mapping

Terrestrial Biodiversity / Flora / Fauna
Spoil disposal areas may destroy habitat, fragment ecological corridors, bury sensitive vegetation and impact SCCs (Species of Conservation Concern)

The EIA must include:

- direct footprint mapping
- cumulative habitat loss analysis
- faunal movement impacts
- invasive species risks associated with disturbed spoil surfaces

Agricultural Potential
The EIA must investigate:

- permanent sterilisation of agricultural soils
- topsoil handling feasibility
- long-term soil degradation
- salinisation risks
- rehabilitation feasibility

A key issue is whether spoil stockpiles render land permanently unusable.

Heritage
Spoil disposal may bury archaeological resources, alter cultural landscapes and damage palaeontological deposits.

The EIA must include:

- spoil footprint heritage surveys
- cumulative landscape transformation assessment

Marine and Coastal Studies
Even if spoil is disposed of on land wind and runoff may transport material back into the marine system.

The EIA must therefore investigate:

- secondary coastal sediment loading
- impacts on surf breaks
- marine turbidity pathways
- coastal sediment balance

Appendix 6 Tunnels

Tunnel structures are described in Section 1.2 "Project Overview."

The project overview describes the intake and outfall structures as follows:
Intake structures:

- 1,000–2,000 m offshore
- 2–3 tunnels
- 5–10 m diameter
- ±30 m depth
- ±1.0 m/s intake velocity

Outfall structures:

- 3–4 tunnels
- ~3 m diameter
- ~500 m offshore
- ~5 m depth
- ±1.0 m/s outfall velocity

The report itself acknowledges this is only a desktop scoping assessment and confirms:
"No additional in situ data collection was undertaken."
So many of the real engineering and marine ecological consequences of these structures have effectively been deferred to the EIA phase.

The intake/outfall structures proposed are up to 10 metres in diameter, extend up to 2 kilometres offshore and may be constructed at depths of ±30 metres in highly sensitive marine environments. That is an extremely large marine engineering intervention.
Yet the scoping report contains no detailed assessment of tunnel construction methodologies, excavation impacts, benthic habitat disruption, entrainment impacts, hydrodynamic plume modelling, subtidal survey data, seabed disturbance footprints, or tunnel-related ecological impacts.

How can the marine impacts of infrastructure of this scale be meaningfully assessed at scoping level when the actual offshore ecological footprint and construction impacts remain undefined?

The report does not appear to quantify:

- actual tunnel excavation volumes,
- drilling/blasting methods,
- tunnel boring machine impacts,
- seabed collapse risks,
- plume modelling from excavation,
- sediment redistribution from tunnelling,
- benthic habitat fragmentation along the tunnel corridors.
- This is significant given:
- intake tunnels up to 10 m diameter,

- depths of ±30 m,
- multiple offshore tunnels extending 1–2 km offshore.

The report mentions:
"Disturbance and/or mortality of marine life due to the intake of seawater" but there is no detailed assessment (at scoping stage) of:

- entrainment of eggs and larvae,
- impingement of fish,
- impacts on squid paralarvae,
- plankton mortality,
- cumulative ecological productivity losses,
- hydrodynamic intake field modelling.

This is especially important given the acknowledged sensitivity of the chokka squid spawning grounds.

No proper assessment of tunnel construction methodology
The report references:

- temporary cofferdams,
- spoil pipelines,
- offshore sediment disposal,

but does not appear to assess:

- marine blasting,
- directional drilling,
- seabed trenching,
- micro-tunnelling,
- shaft construction,
- dewatering impacts,
- groundwater connectivity,
- construction vessel anchoring footprints.

Offshore ecological footprint is poorly defined
Although the structures extend:

- up to 2 km offshore,
- to depths of ±30 m,

the report admits: "no subtidal surveys were conducted." That is a major limitation because the actual offshore tunnel alignments may intersect:

- squid spawning habitat,
- reef systems,
- benthic communities,
- fish nursery areas,
- sediment transport pathways.

Thermal outfall impacts are treated generically
The report does acknowledge thermal discharge as a major concern:
"Thermal impacts are of particular concern for once-through cooling (ΔT = 12°C)"
and rates these impacts as "VERY HIGH" before mitigation.

But again, the actual outfall tunnel geometry and diffuser design appear unresolved.
It is difficult to credibly assess ecological impacts without:

- diffuser modelling,
- local current interaction modelling,
- plume dispersion simulations,
- seasonal stratification analysis,

Detailed Tunnel Alignment and Footprint Mapping
The EIA must provide:

- precise GIS-based tunnel alignments,
- offshore coordinates,
- tunnel entry and exit locations,
- shaft locations,
- staging areas,
- marine disturbance corridors,
- temporary and permanent seabed footprints,
- overlap with sensitive habitats.

This should include detailed mapping against:

- squid spawning grounds,
- reef systems,
- benthic habitats,
- Critical Biodiversity Areas,
- marine ecological support areas.

The EIA phase must therefore include comprehensive geotechnical, hydrodynamic, hydrogeological, marine ecological, fisheries, sediment transport and underwater acoustic investigations before the impacts of the proposed tunnel infrastructure can be meaningfully assessed.

All investigations should not rely solely on [apparent very limited] historical datasets collected during the 2008–2010 studies, but should incorporate updated field measurements, modern instrumentation, contemporary bathymetric surveys and independent validation appropriate for infrastructure of this scale and lifespan.

Geotechnical and Geological Investigations
The EIA must include comprehensive subsurface investigations along the entire tunnel alignments. This is critical because tunnel excavation at ±30 m depth could intersect complex groundwater and geological systems.
Investigations must include:

- Marine geotechnical drilling
- offshore boreholes,
- sediment cores,
- rock quality analysis,
- fracture mapping.
- Geophysical surveys
- seismic profiling,
- side scan sonar,

- sub-bottom profiling,
- bathymetric surveys.
- Stability assessments
- tunnel collapse risk,
- faulting,
- groundwater inflow risk,
- liquefaction potential,
- dune instability interactions,
- coastal erosion interaction.

Tunnel Construction Methodology Assessment

The EIA must explicitly assess the impacts of the actual construction methods proposed. At present, this is almost entirely absent from the Scoping Report.

This includes evaluating:

- tunnel boring machines (TBM),
- drill-and-blast methods,
- micro-tunnelling,
- directional drilling,
- dredging,
- trenching,
- cofferdam construction,
- shaft sinking,
- underwater blasting.
- For each method the EIA must assess:
- ecological disturbance,
- vibration,
- noise,
- turbidity generation,
- sediment release,
- groundwater impacts,
- marine habitat disturbance.

Marine Sediment and Spoil Generation Investigations

The EIA must quantify:

- spoil volumes specifically attributable to tunnel excavation,
- spoil composition,
- grain size distribution,
- contaminated sediment risk,
- acid-generating material potential,
- fine sediment fractions,
- resuspension behaviour.

This must include Sediment plume modelling:

- during excavation,
- during dewatering,
- during spoil transport,
- during spoil disposal.
- Deposition modelling

- seabed burial thickness,
- smothering extent,
- long-term redistribution,
- storm remobilisation.

Hydrodynamic Interaction Modelling
Tunnel portals and marine structures can alter nearshore hydrodynamics. This is particularly important at Thyspunt where coastal sediment systems are dynamic and ecologically important.

The EIA must therefore investigate:

- current alteration,
- wave interaction,
- scour formation,
- sediment trapping,
- erosion/accretion impacts,
- shoreline response,
- surf zone changes,
- dune interaction effects.

Groundwater and Hydrogeological Investigations
This is a major omission risk, and it is particularly important given the regional hydrogeological complexity already identified in other studies.

Tunnel excavation may intersect:

- shallow coastal aquifers,
- perched groundwater systems,
- Table Mountain Group aquifers,
- freshwater seepage systems,
- wetlands,
- dune slacks,
- groundwater-fed ecological systems.

The EIA must therefore include:
Hydrogeological modelling

- groundwater drawdown,
- hydraulic connectivity,
- saline intrusion,
- dewatering impacts,
- spring/baseflow impacts,
- mixing of aquifer systems.

Ecological groundwater dependency assessment

- wetlands,
- freshwater seepage zones,
- estuarine linkages,
- coastal vegetation dependence.

Underwater Noise and Vibration Investigations
Tunnel construction could generate substantial underwater acoustic impacts.
The EIA must include:

- underwater noise propagation modelling,
- blasting noise modelling,
- vibration propagation,
- marine mammal sensitivity analysis,
- fish behavioural response assessment,
- squid sensitivity analysis,
- seabird disturbance modelling.

This must evaluate both:

- construction phase impacts,
- cumulative operational noise.

Marine Ecology Baseline Surveys Along Tunnel Corridors
The Scoping Report admits "no subtidal surveys were conducted."
The EIA must therefore conduct:

- ROV surveys,
- diver surveys,
- benthic habitat mapping,
- reef ecology assessments,
- fish assemblage surveys,
- invertebrate community surveys,
- sensitive habitat delineation.

These must specifically follow the proposed tunnel alignments.

Construction Logistics and Marine Traffic Assessment
Tunnel construction may require:

- dredging barges,
- support vessels,
- spoil barges,
- anchor systems,
- temporary marine platforms.

The EIA must therefore assess:

- vessel collision risk,
- anchoring impacts,
- fisheries interference,
- seabird disturbance,
- marine mammal disturbance,
- cumulative marine traffic impacts.

Failure and Risk Scenarios
The EIA must include credible failure analysis for:

- tunnel collapse,
- seawater ingress,
- pipeline rupture,
- diffuser failure,
- sediment release accidents,
- cofferdam failure,
- major storm interaction during construction.

Cumulative impacts

The Draft Scoping Report fails to assess the cumulative impacts associated with the proposed intake and outfall tunnel systems. Tunnel excavation, spoil generation, sediment disposal, thermal discharge, fisheries exclusion, underwater noise, habitat fragmentation and hydrodynamic alteration do not occur independently, but interact cumulatively across ecological, geological and socio-economic systems over both the construction and operational lifespan of the project.

The current Scoping Report contains only a very weak and generalised cumulative impact discussion. Under NEMA, cumulative impacts must be assessed because environmental impacts do not occur independently.
It does not meaningfully assess the cumulative consequences of a multitude of impacts acting together.

- multiple intake and outfall tunnels,
- tunnel excavation,
- spoil disposal,
- thermal discharge,
- groundwater alteration,
- fisheries exclusion,
- hydrodynamic modification,
- and long-term operational effects

The EIA phase must therefore include a comprehensive cumulative impact assessment specifically addressing the integrated and long-term effects of the tunnel infrastructure on marine ecosystems, fisheries, sediment systems, groundwater systems and coastal processes.

Cumulative Fisheries Impacts
Tunnel impacts cannot be separated from broader marine industrial impacts. The Scoping Report already acknowledges “Very High” spoil disposal impacts on squid fisheries, fisheries exclusion impacts, thermal impacts and intake mortality impacts. But it fails to assess how these interact cumulatively. These cumulative effects may interact to reduce squid spawning success, displace fishing effort, alter fish behaviour, reduce larval survival and affect recruitment over time.

The EIA must assess cumulative impacts arising from:

- tunnel excavation,

- spoil dumping,
- thermal discharge,
- exclusion zones,
- underwater noise,
- vessel traffic,
- habitat fragmentation.

Cumulative "Industrialisation of the Marine Environment"
The tunnel systems are not merely buried structures. They contribute to long-term industrial transformation of the marine environment.

The EIA must therefore assess the cumulative industrial footprint on the coastal ecosystem.

Together with:
- exclusion zones,
- pipelines,
- marine discharges,
- spoil disposal areas,
- construction zones,
- operational infrastructure,

Cumulative Construction Impacts Over Time
Construction impacts are not one-off events. The report presumes construction may last up to five years. Cumulative ecological stress over this duration could be substantial.
The EIA must investigate cumulative impacts from:
- years of excavation,
- repeated blasting,
- repeated turbidity events,
- continuous vessel operations,
- ongoing noise,
- long-duration marine disturbance.

Appendix 7 Geohydrology

The Specialist Geohydrology Study appears predominantly framed around engineering feasibility, groundwater control and nuclear site suitability, rather than around the ecological functioning and sensitivity of the integrated groundwater-dependent ecosystem.

Although wetlands, springs, coastal seeps and hydraulic connectivity between the Algoa and TMG aquifers are acknowledged, the report does not adequately scope the ecological consequences of altering groundwater discharge dynamics, hydro-chemical interactions and aquifer pressures.

The study therefore underplays the ecological significance of the groundwater system by treating ecological features primarily as engineering constraints or receptors to be mitigated, rather than as complex and potentially highly sensitive groundwater-dependent ecosystems requiring independent hydro-ecological assessment.

The report's repeated emphasis on the absence of downstream groundwater users reflects an anthropocentric groundwater resource framing that inadequately recognises the ecological importance of coastal groundwater discharge systems, wetlands, springs, seeps and baseflow-supported habitats.

The Specialist Geohydrology Study is primarily framed around:

- nuclear site suitability,
- engineering feasibility,
- groundwater control during construction,
- contaminant containment,
- groundwater abstraction,
- and regulatory compliance for a nuclear installation,

rather than around the ecological functioning of the groundwater system itself.

That emphasis is visible throughout the report structure, methodology, impact framing and conclusions.
For example, the report repeatedly focuses on:

- dewatering feasibility,
- aquifer depletion significance,
- contaminant transport,
- groundwater control measures,
- numerical groundwater modelling,
- and mitigation to enable construction.

Even the main impact assessment is narrowly framed around only three primary groundwater impacts:

- Aquifer depletion by dewatering;
- Aquifer depletion through groundwater abstraction;
- Groundwater contamination.

That is a surprisingly constrained framing for such a complex coastal groundwater-dependent ecosystem. The ecological system is acknowledged, but largely treated as: a receptor, a constraint to engineering, or something to be mitigated operationally, rather than as an integrated ecological-hydrological system with intrinsic ecological function and uncertainty.

The strongest evidence for this is that wetlands, coastal seeps, springs, and groundwater-fed systems are identified, yet the report does not appear to undertake a full hydro-ecological dependency assessment.

Groundwater-dependent ecosystems are not comprehensively classified, ecological thresholds are not quantified, environmental flow requirements are not established, and long-term ecological resilience to groundwater alteration is not properly assessed.

Instead, the report tends to move quickly from identifying ecological linkages to proposing engineering mitigation measures such as:

- cut-off walls,
- artificial recharge,
- groundwater control systems,
- and footprint setbacks.

This approach is essentially focused on engineering principles. Another indicator is the repeated emphasis that: "*there will not be any downstream groundwater use*"
This framing subtly prioritises human groundwater abstraction receptors over ecological groundwater discharge functions.
But ecologically, this is misleading because coastal springs, seep systems, wetlands, stream baseflow, estuarine interactions, and groundwater-supported vegetation are themselves critical receptors, even if there are no downstream borehole users.

The report also appears to assume that because the site is near the "end of the groundwater flow path," impacts are inherently limited.

From an ecological perspective, however, discharge zones are often the most sensitive parts of groundwater systems because they sustain:

- wetlands,
- coastal seeps,
- dune slack systems,
- salinity balances,
- and ecological refugia.

In many hydro-ecological systems, discharge zones are precisely where groundwater dependence becomes most ecologically important.

A further concern is that the significance ratings ("Low" to "Very Low") appear heavily influenced by engineering mitigation assumptions before ecological uncertainty has been fully resolved.
This creates a form of mitigation-driven significance reduction, rather than precautionary ecological assessment.

The report Geohydrology Scoping Report acknowledges:

- a hydraulically connected dual aquifer system;
- upward groundwater flow from the deeper TMG aquifer;
- groundwater-fed wetlands, seeps and coastal springs; and
- the existence of mixed groundwater signatures from different aquifer systems.

However, despite this, the Scoping Report does not appear to fully scope the ecological and hydrological consequences of long-term construction dewatering on interconnected groundwater-dependent ecosystems (GDEs), especially where the interaction between the Algoa Aquifer and TMG aquifer may sustain wetlands, coastal seeps and stream baseflow.

The concern raised in the Mohuba et al. (2020) study regarding mixing of groundwater types is critical because it implies the system is not hydraulically simple or isolated. If dewatering alters pressure gradients between the shallower Algoa Group aquifer and the deeper TMG aquifer, it could disrupt:

- spring discharge rates,
- wetland hydroperiods,
- stream baseflow contributions,
- salinity balances,
- groundwater chemistry,
- ecological functioning of groundwater-dependent wetlands and seeps.

The Draft Scoping Report acknowledges hydraulic connectivity between the Algoa Group and TMG aquifers, upward groundwater flow, and groundwater-fed wetlands, springs and coastal seeps, yet fails to adequately scope the risk that construction dewatering may disrupt natural groundwater discharge systems sustaining wetlands, streams and coastal seep ecosystems. The report further fails to adequately investigate the complex hydro-chemical and hydraulic interactions identified by Mohuba et al. (2020), including mixing between groundwater systems and the dependence of ecological receptors on these interactions.

Given the acknowledged hydraulic connectivity between aquifers and the ecological dependence of wetland and seep systems on groundwater discharge, the precautionary principle requires a far more rigorous hydro-ecological investigation during the EIA phase. The current scoping approach risks materially underestimating irreversible ecological impacts associated with aquifer dewatering and groundwater flow alteration within a highly vulnerable coastal aquifer system.

These issues represent significant scoping deficiencies that necessitate thorough investigation during the EIA phase.

EIA Investigations Required

Quantified Groundwater-Dependent Ecosystem (GDE) Assessment

The report identifies wetlands, dune slacks, hillslope seeps and coastal seeps, but does not fully quantify:

- their groundwater dependence,
- seasonal groundwater thresholds,
- ecological flow requirements,
- or sensitivity to drawdown.

The EIA phase should therefore include:

- Detailed hydro-ecological classification of all wetlands, springs, seeps and baseflow systems;
- Determination of ecological reserve requirements;
- Identification of critical groundwater level thresholds;
- Determination of minimum groundwater pressures required to sustain discharge;
- Mapping of groundwater-dependent vegetation communities;
- Seasonal ecological response monitoring.

This is important because coastal seeps are specifically identified as occurring along the shoreline.

Coupled Surface Water–Groundwater Interaction Modelling

The report contains conceptual linkage diagrams but does not appear to include fully coupled transient modelling of:

- stream baseflow,
- wetland recharge/discharge,
- coastal seep discharge,
- or spring-flow response under construction dewatering scenarios.

The EIA should therefore include:

- Integrated groundwater-surface water numerical modelling;
- Seasonal transient modelling;
- Drought condition simulations;
- Multi-year dewatering scenarios;
- Drawdown propagation modelling into wetlands and streams;
- Climate variability sensitivity analysis.

This is especially important because the report itself states: "These aquifers are likely to be in hydraulic connection, with an upward component of flow in the fractured rock aquifer."
That statement alone requires a much more rigorous investigation into vertical hydraulic coupling and discharge support mechanisms.

Investigation of Vertical Hydraulic Connectivity Between the Algoa and TMG Aquifers

The report repeatedly assumes hydraulic connection but does not fully resolve:

- the degree of vertical leakage,
- preferential fracture pathways,
- pressure transfer mechanisms,
- or fault/fracture-controlled discharge systems.

The EIA phase should therefore include the relevant investigations to ensure that the impact of dewatering on deeper pressure-supported spring systems is assessed.

Spring and Coastal Seep Inventory and Monitoring

The report acknowledges coastal springs/seeps but treats them largely as receptors rather than dynamic groundwater discharge systems.
The EIA should include:

- Full inventory of all springs and coastal seep systems;
- Continuous flow monitoring;
- Salinity monitoring;
- Temperature monitoring;
- Seasonal variability assessment;
- Ecological dependency studies;

- Isotope fingerprinting to determine source aquifer contributions.

This is essential because reduction in artesian pressure or alteration of mixing ratios between TMG and Algoa groundwater could permanently alter these systems.

Baseflow Separation and Catchment Hydrology Assessment

The report discusses rivers and wetlands but does not appear to quantify:

- groundwater contribution to streamflow,
- seasonal baseflow dependence,
- or impacts of reduced groundwater discharge on freshwater ecology.

The EIA should therefore include:

- Baseflow separation studies;
- Stream gauging;
- Environmental flow requirements;
- Catchment-scale groundwater contribution analysis;
- Dry-season flow dependency analysis;
- Cumulative hydrological impact assessment.

Long-Term Dewatering and Recovery Assessment

The report appears focused mainly on operational mitigation and short-term drawdown significance ratings.

The EIA should instead investigate:

- Multi-year dewatering impacts;
- Recovery times after construction;
- Irreversible aquifer compaction risk;
- Wetland recovery potential;
- Permanent loss of discharge zones;
- Delayed ecological impacts;
- Residual cumulative impacts after rehabilitation.

Cumulative Impact Assessment

This is a major omission. The current scoping approach appears overly compartmentalised.

The EIA should assess cumulative impacts between:

- dewatering,
- climate variability,
- drought,
- regional groundwater abstraction,
- desalination infrastructure,
- spoil disposal,
- wetland alteration,
- and coastal geomorphological change.

Appendix 8 Freshwater Ecology

The EIA phase Freshwater Ecology Assessment must include, evaluate and respond to the findings of:
Mohuba, S.C., Abiye, T.A., Demlie, M.B. & Modiba, M.J. (2020)
"Hydrogeological Characterization of the Thyspunt Area, Eastern Cape Province, South Africa" Hydrology 2020, 7, 49.

The later (2020) hydrogeological characterisation appears to indicate a substantially more hydraulically connected and structurally complex groundwater system than assumed in portions of the earlier wetlands monitoring and dewatering assessments. (Additional Wetlands Monitoring on Proposed Eskom Nuclear Sites Thyspunt, Bantamsklip and Duynefontein. Final Report. SRK 2011)

This raises material uncertainty regarding the reliability of drawdown modelling, the assumption of perched wetland isolation, and the predicted effectiveness of mitigation measures such as cut-off walls and reinjection systems.

E.g.
Mohuba *et al*. (2020) "Similarities in the stable isotope signatures between the deeper and shallow aquifer confirm the presence of a strong hydraulic link."

By contrast, the SRK (2011) Wetlands Monitoring Report concludes that large portions of the Langefonteinvlei are "perched above the groundwater table" and therefore supposedly insulated from groundwater drawdown effects.
"the groundwater table lies beneath the wetland and is not directly linked to it" and
"*Drawdown … is therefore unlikely to have any effect on wetland hydrology or hydroperiod."*

The Mohuba et al (2020) peer-reviewed hydrogeological study is therefore directly relevant to the assessment of freshwater ecological impacts at Thyspunt because it identifies:

- strong hydraulic connectivity between shallow and deeper aquifers;
- shallow groundwater occurrence;
- groundwater-dependent wetlands and springs;
- fracture-controlled groundwater movement;
- artesian conditions;
- dynamic recharge processes within the dune system; and
- extensive surface water–groundwater interactions.

The Freshwater Ecology Scoping Report itself acknowledges reliance on hydrogeological, hydrological and geomorphological inputs in understanding aquatic ecosystem functioning.

The EIA phase must specifically investigate:
- groundwater dependency of wetlands;
- groundwater–wetland connectivity;
- impacts of dewatering on groundwater-dependent ecosystems;

- impacts of excavation and dune disturbance on recharge processes;
- cumulative impacts on wetland permanence and hydrological functioning; and
- indirect ecological impacts arising from alterations to groundwater flow systems.

The EIA should further demonstrate how the findings of the Mohuba et al. (2020) study have been incorporated into:

- the conceptual eco-hydrological model for the site;
- wetland sensitivity assessments;
- groundwater impact modelling;
- impact significance assessments; and
- mitigation and monitoring measures.

The Freshwater Ecology Scoping Report identifies a substantial number of investigations, assessments and unresolved issues that must be carried forward into the EIA phase. These relate not only to wetlands and rivers themselves, but also to groundwater interactions, dewatering, sewage, stormwater, spoil disposal and cumulative impacts.

It is important that the impacts of the proposed access roads be included as part of all the investigations listed below. (Also see Appendix 9 - Access Roads)

Detailed aquatic ecosystem impact assessment

The EIA phase must include a full specialist aquatic ecosystems impact assessment compliant with the DFFE 2020 Specialist Reporting Protocols. This must include:

- direct impacts,
- indirect impacts,
- cumulative impacts,
- mitigation,
- management measures,
- significance assessment,

The EIA should include:

- detailed wetland delineation,
- ecological condition assessments,
- hydrological functioning assessments,
- verification of wetland boundaries,
- updated sensitivity mapping.
- hydrogeological-aquatic ecosystem integration,
- groundwater level monitoring,
- assessment of impacts on springs, seeps and baseflow systems,
- modelling of groundwater drawdown,
- assessment of impacts on peat wetlands and dune slacks.

This becomes especially important because the report flags dewatering as a major unresolved issue.

Dewatering investigations.

The scoping report explicitly states:
"No details have been provided as yet as to the volume of dewatering required".
It further notes that engineering interventions may be required to prevent sand liquefaction,

and to limit impacts on groundwater-dependent ecosystems.
The EIA should therefore include:

- dewatering volume calculations,
- groundwater depression modelling,
- ecological drawdown thresholds,
- impacts on wetlands and streams,
- impacts on dune slack hydrology,
- recovery modelling after construction.

Stormwater management investigations
The report states that stormwater systems are still conceptual and assumes separation of clean and contaminated stormwater, attenuation ponds and treatment systems.
The EIA therefore needs:

- detailed stormwater management plans,
- pollution risk assessments,
- sediment transport modelling,
- contamination pathways,
- wetland contamination risk analysis,
- flood and erosion assessments.

Sewage treatment and wastewater disposal investigations
The report notes that no actual specifications exist for sewage treatment, no effluent quality standards are provided, and no disposal routes are identified.
Given the projected workforce numbers, the EIA should include:

- sewage treatment design,
- wastewater disposal routes,
- groundwater contamination risk,
- radionuclide contamination pathways,
- nutrient loading impacts,
- cumulative water quality impacts.

Spoil disposal investigations
The report identifies enormous spoil volumes and states: “No details are yet available as to the planned disposal of excess spoil”.
Potential disposal options mentioned include hydraulic pumping to sea, disposal in dunes, beach disposal and transport to HV yard areas.
The EIA therefore requires:

- spoil disposal site assessments,
- sediment transport studies,
- wetland burial risks,
- contamination assessments,
- runoff and erosion impacts,
- cumulative aquatic impacts.

Climate change investigations
The report states: “Climate change impacts “will be assessed in the EIA phase”.
This should include:

- altered rainfall patterns,

- groundwater recharge changes,
- wetland resilience,
- sea level rise interactions,
- increased storm intensity,
- long-term hydrological regime shifts.

Cumulative impact investigations
The report acknowledges that several major project components were excluded from detailed scoping and must be assessed cumulatively, including transmission corridors, workforce accommodation, sanitation demand, fencing and regional infrastructure expansion.
The EIA should therefore include:

- regional cumulative aquatic ecosystem assessments,
- secondary growth impacts,
- indirect wetland degradation,
- increased abstraction risks,
- infrastructure fragmentation impacts.

Water Use Licence investigations
The EIA must support a WULA process and identify all applicable Section 21 water uses under the National Water Act.
This includes investigations into:

- watercourse alteration,
- dewatering,
- discharge,
- waste disposal,
- heated water,
- groundwater abstraction,
- flow modification.

Appendix 9 Access Roads

The EIA phase must not treat the proposed Eastern and Western Access Roads as minor associated infrastructure. The previous Final Environmental Impact Report (FEIR) for Nuclear 1 show that access roads are a major impact pathway at Thyspunt, especially through wetland, dune, valley-bottom, seep, coastal thicket, heritage and mobile-dune systems.

The FEIR Wetland Study recorded that Thyspunt has the "greatest number, intensity and complexity" of wetland impacts, including fragmentation, infilling and disturbance of dune-slack wetlands, valley-bottom wetlands and coastal seeps from proposed roads. It also recommended that unavoidable wetland crossings should be bridged and that the northern access road should not be used.

The following investigations should therefore be required for the EIA:

Route alternatives and no-go assessment
Each eastern and western road alignment must be assessed as a standalone alternative, including the no-road/no-go option. Any deviation from the FEIR-assessed corridor must be formally reassessed, especially if a 60–100 m disturbance corridor is now contemplated.

Freshwater ecology and wetlands
A full wetland delineation must be undertaken along the entire road corridors, including valley-bottom wetlands, coastal seeps, dune-slack wetlands, interdune ponds and wetland buffers. The EIA must assess fragmentation, infilling, altered surface flow, altered groundwater discharge, sedimentation, culvert effects, stormwater concentration, and floodplain constriction. All unavoidable wetland crossings must be bridge-based rather than filled or culverted where possible.

Dune geomorphology
The EIA must update the FEIR dune work using current aerial imagery, LiDAR/contours and field verification. It must assess mobile dune advance, cut-and-fill impacts, dune stabilisation, blowouts, slumping, sand movement, road burial risk, and whether road construction would artificially fix or fragment the Oyster Bay dunefield. The previous geomorphology addendum found that western access routes cross mobile dunes moving through valleys that would be filled for road construction, requiring stabilisation of upwind mobile dune patches.

Flood-risk assessment
A specialist hydrology/geomorphology flood study must assess interdune pond breaching, culvert failure risk, sediment transport and road wash-away risk.

Terrestrial biodiversity, flora and fauna
The proposed road corridors must be walked by botanical, faunal and terrestrial biodiversity specialists. The assessment must map all intact coastal thicket, milkwood stands, Species of Conservation Concern plants, faunal corridors, reptile/amphibian habitat, bird movement areas, roadkill risk, lighting impacts, edge effects, alien vegetation spread and habitat fragmentation.

Heritage, archaeology and palaeontology
The full road corridors, borrow areas, construction camps, spoil areas and laydown areas must be surveyed for archaeological, palaeontological and cultural landscape sensitivity. The eastern and western roads must not rely on desktop heritage assumptions from old alignments.

Stormwater, erosion and sediment control
The EIA must include road-specific stormwater modelling for construction and operation, including sediment-laden runoff into wetlands, dune destabilisation, culvert blockages, climate-change rainfall events and long-term maintenance obligations.

Cumulative impact assessment
The roads must be assessed cumulatively with transmission lines, construction village, spoil disposal, pipelines, HV yard, temporary access tracks, borrow pits and long-term operational traffic. The FEIR Nuclear 1 Wetland Study warned that even with mitigation, the combined infrastructure could substantially erode the integrity of a high-conservation-value natural ecosystem.

Mitigation hierarchy and offset warning
Avoidance must be prioritised. Offsets or post-construction rehabilitation cannot be used to justify avoidable road impacts through wetlands, mobile dunes, coastal seeps or heritage-sensitive areas. The EIA must clearly identify residual impacts that remain unmitigable.

Appendix 10 Biodiversity

The current biodiversity scoping remains overly reductionist and site-footprint focused, while failing to adequately assess landscape-scale ecological processes, ecosystem rarity, dynamic coastal system behaviour, climate resilience, and the strategic conservation importance of the greater Thyspunt landscape.

Failure to Properly Assess St Francis Strandveld

The scoping reports repeatedly state that no threatened ecosystems occur within the Thyspunt footprint.
SANBI vegetation schemes: 2006, 2018, and 2026 classifications are used interchangeably, creating confusion and potentially misleading conclusions regarding ecosystem threat status.

The EIA should include:

- A full reassessment of vegetation classification using the latest SANBI mapping and taxonomic framework.
- A formal Red List Ecosystem assessment of St Francis Strandveld.
- Detailed mapping of all remaining intact remnants within the Thyspunt landscape.
- Quantification of habitat loss and fragmentation.
- Assessment of ecosystem irreplaceability and conservation targets.
- Comparative assessment of the Thyspunt footprint relative to the total remaining extent of the ecosystem.
- Evaluation of whether the proposed development could trigger ecosystem collapse thresholds.

Inadequate Climate Change Assessment

The scoping reports appear to focus primarily on current ecological conditions rather than future ecosystem resilience.

The EIA should therefore include:

- climate change vulnerability assessments,
- sea-level rise impacts on dune and wetland systems,
- shifting fire regime projections,
- drought stress modelling,
- invasive species expansion under climate stress,
- and long-term ecosystem resilience analysis.

Importantly, the EIA should assess whether the Thyspunt landscape represents a future climate refugium for coastal biodiversity.

Ecological Processes:

The reports focus heavily on static habitat mapping while inadequately assessing ecological process systems.

The Thyspunt landscape is process driven. The reports themselves acknowledge that biodiversity significance is linked to “process-linked features” such as mobile dunes and wetlands yet process ecology has not been properly quantified.

The EIA should therefore include:

- landscape-scale ecological process modelling,
- hydrological-ecological coupling studies,
- groundwater dependency mapping,
- ecological corridor modelling,
- wetland process connectivity,
- and cumulative process disruption assessments.

This is important because major infrastructure such as access roads, spoil disposal sites, transmission corridors and laydown areas could fragment these process systems.

Inadequate Seasonal and Floristic Survey Effort

The field survey was undertaken in December 2025, this occurs during summer stress conditions, flowering diversity is low, and many species may not have been detectable.

Required EIA investigations

- multi-season floristic surveys,
- repeat surveys across multiple rainfall periods,
- targeted Red List species searches,
- post-fire succession surveys,
- and long-term vegetation monitoring plots.

This is especially important in highly dynamic Cape Floristic Region systems.

Underestimation of Floristic Significance

Several statements in the scoping report imply moderate species richness, comparatively low rare species representation, and lower significance than other Cape coastal systems.
Other scientific work clearly indicates that the greater Cape St Francis region has exceptionally important floristic characteristics.

The EIA should therefore:

- conduct quantitative floristic richness analysis,
- compare Thyspunt against regional Cape coastal systems,
- assess endemicity,
- evaluate paleo-endemism and neo-endemism,
- and determine conservation uniqueness at both local and regional scales.

Failure to Properly Address Protected Area Expansion and Conservation Networks

The DSR omits several conservation properties and stewardship areas.
This creates a potentially misleading impression of the regional conservation landscape.

The EIA should therefore:

- map all formal and informal conservation areas,
- assess ecological connectivity between reserves,
- assess protected area expansion priorities,
- and evaluate how the NPP footprint could compromise long-term landscape conservation planning.

Cumulative Impact Assessment Remains Weak

The scoping reports acknowledge cumulative impacts only at a high level.

The broader cumulative transformation trajectory has been adequately addressed.

The EIA should therefore assess cumulative impacts from:

- roads,
- groundwater abstraction,
- invasive species,
- climate change,
- and fragmentation of ecological process systems.

This assessment should occur at the scale of the broader St Francis–Oyster Bay coastal landscape, not merely within the immediate NPP footprint.

Appendix 11 Energy

THE THYSPUNT ALLIANCE

Specialist Energy Objection to the Draft Environmental Scoping Report

The Unlawful Fragmentation of an Integrated Energy Project — Transmission Grid, Construction-Phase Power Supply, and Energy Alternatives

Proposed 5,200 MW Nuclear Power Plant, Thyspunt, Eastern Cape

EIA Reference	ZA0058322.7774 · Our Ref 2025-10-0003 · WSP Group Africa (Pty) Ltd · April 2026
Proponent	Eskom Holdings SOC Limited
Prepared by	Donald McGillivray — Energy Specialist, for the Thyspunt Alliance
Scope of this objection	Grid, transmission and energy aspects of the DSR. Complements, and should be read with, the Alliance's principal formal submission.
Status	Specialist objection / scoping comment — for incorporation into the Alliance's formal lodgement

Contents

1. Introduction, capacity and scope

1.1 Capacity

This objection is submitted by Donald McGillivray, acting as Energy Specialist for the Thyspunt Alliance, a coalition of interested and affected parties registered in the public participation process for the proposed Thyspunt Nuclear Power Plant. The Alliance and its members are I&APs within the meaning of the EIA Regulations and are directly affected by the matters raised.

1.2 Scope and relationship to the principal submission

This is a specialist objection. It addresses only the energy and electrical-infrastructure dimensions of the DSR. It supplements the Alliance's principal formal submission and, in particular, develops and deepens the grounds there identified concerning alternatives (A.1), the Plant Parameter Envelope (A.3), the absent levelised-cost comparison (E.3), the artificially narrow project boundary (E.5) and project splitting of transmission infrastructure (D.7). Nothing here should be read as withdrawing or narrowing any other ground of objection.

1.3 The central contention, in one sentence

> THE OBJECTION IN ONE SENTENCE
>
> **WSP has drawn the boundary of the assessment (the "battery limits") at the on-site high-voltage yard, and in doing so has excised from environmental assessment three activities that are functionally inseparable from the power station:** (i) the permanent transmission network of up to 1,400 km of 400 kV and 765 kV lines required to evacuate the plant's output; (ii) the power supply and temporary electrical infrastructure required to construct the plant over some fifteen years; and (iii) a genuine, quantified assessment of energy alternatives. None of these can be lawfully or rationally assessed in isolation from the generation facility, and the DSR's own text repeatedly confirms as much.

1.4 Why "separate but dependent" is the wrong frame

WSP's position throughout the DSR and the public participation process is that the transmission lines are the responsibility of a different applicant (the National Transmission Company of South Africa, NTCSA) and will be the subject of a separate EIA at an unspecified future date. The difficulty is not that two applicants may be involved. The difficulty is that a **single, indivisible development** — a nuclear power station that exists only in order to put electricity onto the grid — has been carved into pieces for assessment, with the largest environmental footprint and the decisive cost and timing variables placed outside the boundary. A power station that cannot evacuate its output is not a power station; it is a stranded structure. The generation facility and its evacuation network are one project. They must be assessed as one project.

2. Summary of grounds

This objection advances five linked grounds. Each is developed in Section 4 and reduced to specific questions in Section 5.

CODE	GROUND	SUBSTANCE	CLASSIFICATION
EG-1	**Permanent transmission network excised**	The up-to-1,400 km of 400/765 kV evacuation lines — the single largest land and ecological footprint of the whole development — are excluded from the EIA as a notional "separate" process.	Procedural / Fatal
EG-2	**Construction-phase power supply unassessed**	The DSR lists "electrical power" as a core construction activity yet never defines or assesses the temporary power supply or distribution infrastructure needed to build the plant.	Material Gap
EG-3	**Energy-alternatives comparison structurally biased**	Nuclear's enormous transmission burden is excluded from its footprint, while the renewable alternative is dismissed for lacking a "discrete footprint." The comparison is rigged by the boundary.	Methodologically Fatal
EG-4	**Cumulative impacts unassessable**	With connected and enabling activities outside the boundary, the cumulative-impact assessment NEMA requires cannot be performed.	Critical Deficiency
EG-5	**Internal contradictions on grid integration**	The DSR states both 450 km and 1,400 km for the same lines, relies on transmission feasibility to choose the site while excluding transmission from scope, and presents no system or load-flow study.	Adequate-information failure

3. What the DSR itself discloses — the documentary record

The grounds that follow do not depend on external evidence or on the Alliance's own analysis. They are established by the proponent's own documents. The following extracts — reproduced in substance with references — are the evidentiary spine of this objection. Where two extracts contradict one another, both references are given so that the contradiction can be verified directly.

DSR / APPENDIX REFERENCE	WHAT THE PROPONENT'S OWN DOCUMENT DISCLOSES
DSR §4.1.3, pp. 105–106; Appendix G22 §3.3.3	**The exclusion.** Transmission lines and transmission corridors "beyond the on-site HV Yard" are expressly excluded from the battery limits and are "not authorised through this ESIA." Also excluded: external access roads, water-use and discharge authorisations, off-site construction camps, off-site staff accommodation and off-site emergency-planning infrastructure.
Public Participation Report (Part 04), responses 97, 98, 161, 162, 293	**WSP's stated position.** In answer to direct questions ("How can transmission not be included in the assessment?"), WSP repeatedly states that the EIA is limited to the generation facility and its connection to the HV yard, and that transmission lines will be handled by a separate applicant (NTCSA) under a separate EIA.
DSR §4.2.2.25, p. 133 — versus — DSR §6.4.2 & Table 6-5, pp. 177–179	**The line-length contradiction.** Chapter 4 states that "around 450 km of 400 kV lines will be required" for Thyspunt and that "no delay… is expected." Chapter 6 states that "around 1,400 km of 765 / 400 kV lines will be required." The same report gives two figures differing by a factor of three for the same infrastructure.
DSR site-comparison table, p. 175; Table 6-5, p. 178	**Transmission used to choose the site.** Transmission feasibility is an express discriminator in selecting Thyspunt over Bantamsklip: Thyspunt's connection is rated "achievable before 2039," Bantamsklip's "unlikely… due to complex and sensitive terrain." Transmission is therefore decisive to the preferred-site finding.
DSR CCIA scope, p. 731	**The climate-assessment contradiction.** The Climate Change Impact Assessment commits to consolidating emissions from "all interdependent project components, including… associated grid connection and project-enabling transmission infrastructure." WSP's own methodology therefore treats transmission as an interdependent component of this project — for greenhouse-gas purposes only.
DSR Table 10-1, p. 485; Table 11-4, p. 709	**Construction power named, not assessed.** The construction phase is defined to include "the creation of surface infrastructure, access and electrical power" and "Utilities (water, electricity, communications)." Yet no construction power-supply strategy is described or assessed. Table 11-4 already fixes the "Preferred Energy Alternative" as "Nuclear."
DSR infrastructure / plant-population table (Ch. 4)	**The workforce admission.** Eskom's own staffing figures include 700 off-site workers — expressly "300 substations, 400

DSR / APPENDIX REFERENCE	WHAT THE PROPONENT'S OWN DOCUMENT DISCLOSES
	transmission." The proponent thus budgets a 700-strong off-site workforce for transmission and substation works that it says are outside the project.
Appendix G22 §3.4.2.27	**Temporary distribution lines disclosed.** "Distribution power lines" are listed among the temporary and permanent services to be routed parallel to on-site access roads — confirming construction-phase electrical infrastructure exists, while its source, capacity and impact remain unassessed.
DSR §6.4.2.2 (Corridor)	**The grid is admittedly constrained.** WSP records that the transmission network in the Western, Eastern and Northern Cape is "severely constrained" and "would require substantial strengthening" — i.e. the evacuation network does not yet exist and must be built.

4. Grounds of objection

Each ground identifies what the DSR does, why it is a shortcoming, and — consistently with the purpose of a scoping comment — the specific matters the EIA must address. The legal anchors are stated for convenience; the precise pleading of authority is, of course, a matter for Cullinans.

EG-1	The permanent transmission network — the project's largest footprint — has been excised from assessment	PROCEDURAL / FATAL
DSR / SOURCE DSR §4.1.3 (pp. 105–106); §6.4.2 (pp. 176–179); Public Participation Report Pt 04	LEGAL ANCHOR NEMA s 2(4)(b); s 24; EIA Regs GNR 982/2014; cumulative-impact principle	

The proposed plant requires up to five 400 kV lines to the Grassridge substation and two 765 kV Gamma–Grassridge lines — some 1,400 km of high-voltage transmission — to evacuate its output. The existing Melkhout–Grassridge 132 kV corridor (of the order of 150–300 MVA, built for local load and wind connection) is wholly inadequate for nuclear evacuation. By fixing the battery limits at the on-site HV yard, the DSR places this entire network outside the assessment and characterises it as a future NTCSA process.

Why this is a shortcoming.

- The transmission network is, in all probability, the **largest single land-take, vegetation-clearance, avifaunal-collision and visual footprint** of the entire development — 1,400 km of servitude across the Eastern Cape. Excluding it removes the dominant environmental impact from view.
- The plant has **no purpose and no function** without evacuation. Generation and transmission are not "associated" activities in some loose sense; the one is the reason for the other. They are a single activity for assessment purposes.
- Deferring transmission to a "separate", later, differently-applicant EIA is the textbook description of **project splitting (segmentation / "salami-slicing")**, which defeats the integrated-management duty in NEMA and the cumulative-impact requirement, and which is precisely the mischief the holistic-assessment line of authority (e.g. the Constitutional Court in Fuel Retailers) was decided to prevent.
- WSP cannot consistently maintain that transmission is outside scope while **relying on transmission feasibility to select Thyspunt over Bantamsklip** (DSR p. 175). If transmission is material enough to decide the site, it is material enough to assess.

NOTE WSP'S OWN CONCESSION

Admission against interest: WSP's own Climate Change Impact Assessment (DSR p. 731) commits to assessing "associated grid connection and project-enabling transmission infrastructure" as an "interdependent project component." WSP therefore concedes that transmission is an interdependent component of this project. There is no rational basis for including it for greenhouse-gas purposes while excluding it from biodiversity, avifauna, heritage, visual, freshwater and socio-economic assessment.

EG-2	**The construction-phase and temporary-works power supply — the "temporary construction grid" — is an undisclosed, unassessed, grid-dependent activity**	MATERIAL GAP
DSR / SOURCE DSR Table 10-1 (p. 485); Appendix G22 §3.4.2.27; DSR §4.2.2 (water/desalination)	LEGAL ANCHOR NEMA s 24; EIA Regs GNR 982/2014 — adequate information	

The DSR expressly defines the construction phase to include "the creation of surface infrastructure, access and electrical power," and lists "Utilities (water, electricity, communications)" among site-preparation activities (Table 10-1). Appendix G22 confirms that "distribution power lines" will run parallel to on-site access roads. Yet **nowhere does the DSR describe, let alone assess, how the construction of the plant will be powered.**

Why this is a shortcoming.

- Building a 5,200 MW nuclear plant over roughly fifteen years involves an enormous, sustained construction load: a 6,500-strong vendor construction workforce, a 24.3 ha concrete-batching and temporary-works area, sand-pumping pipelines, aggregate conveyors, dewatering, and a temporary desalination plant running **continuously during earthworks at up to 11,700 m³/day**. Desalination and large-scale pumping are electrically intensive.
- That construction power must come from somewhere. Either it is drawn from the existing 132 kV network — which the DSR itself admits is "severely constrained" — requiring **temporary grid reinforcement and distribution infrastructure that is nowhere assessed**; or it is generated on site (the parameter tables disclose auxiliary steam boilers and 676 m³ of diesel storage), with the associated air-quality, greenhouse-gas and fuel-logistics impacts over a fifteen-year construction — again unassessed as an electrical-supply strategy.
- The "temporary construction grid" is therefore a **real, named, but undefined activity**. The DSR cannot list "electrical power" as a construction activity and simultaneously leave its source, capacity, routing, footprint and impacts entirely blank.

> This gap is independent of EG-1. Even if the permanent evacuation network were (wrongly) treated as a separate process, the construction-phase power supply is an on-project, in-corridor activity that the DSR itself places inside the construction definition. It must be scoped and assessed in this EIA.

EG-3	**Excising the grid burden makes the energy-alternatives comparison structurally biased and incapable of lawful completion**	METHODOLOGICALLY FATAL

DSR / SOURCE DSR §6.4.4 & Table 6-7; Table 11-4 (p. 709); §5 (Need & Desirability)

LEGAL ANCHOR NEMA s 24(4)(b); EIA Regs GNR 982/2014; GN 792/2012; DEA Guideline 5

The DSR fixes the "Preferred Energy Alternative" as nuclear at the scoping stage (Table 11-4) and dismisses the renewables-with-firming alternative on the stated ground that it "does not have a discrete footprint… that can be meaningfully assessed within a project-level EIA." No levelised-cost comparison appears anywhere in the 744-page report.

Why this is a shortcoming — the asymmetry.

THE FATAL ASYMMETRY

The renewable alternative is rejected for lacking a "discrete footprint." Yet the **nuclear option's own footprint has been deliberately shrunk** by placing its 1,400 km transmission network, its construction power supply, its access roads and its off-site works outside the boundary. The proponent has, in effect, **compared a fully-costed, fully-footprinted renewable portfolio against an artificially truncated nuclear project** — and then declared the renewable portfolio too diffuse to assess. The comparison is biased by the very boundary decision challenged in EG-1.

Further shortcomings.

- A "discrete footprint" is not a recognised screening criterion under NEMA, the EIA Regulations or DEA Guideline 5. Feasibility and reasonableness are the tests; complexity is not a lawful basis for exclusion.
- Fixing "Nuclear" as the preferred energy alternative **before** any comparative assessment predetermines the outcome and reduces the alternatives exercise to confirmation of a chosen activity — the precise failure the DSR's own text (pp. 162–163) warns against.
- The Need-and-Desirability chapter contains no quantified cost, no tariff-impact analysis and no comparison of competing options — so the constitutional affordability dimension of need and desirability (GN 792; Constitution ss 24 and 27) is unaddressed.

EG-4	**Cumulative and connected-activity impacts cannot be assessed within the artificial battery limits**	CRITICAL DEFICIENCY
DSR / SOURCE DSR §4.1.3–4.1.4; §10–11	LEGAL ANCHOR NEMA s 2(4)(vii) cumulative impacts; s 2(4)(b) integrated management	

NEMA requires that the cumulative effects of an activity and its connected and enabling activities be considered. The DSR acknowledges (§4.1.4) that excluded activities "may influence the environmental acceptability" of the plant and undertakes to "identify" interfaces — but identifying an interface is not assessing an impact.

Why this is a shortcoming.

- With the transmission network, the construction power supply, the access roads, the off-site camps and the off-site emergency infrastructure all outside the boundary, the universe of activities whose impacts could be **aggregated** has been hollowed out. A cumulative-impact assessment of a fragment is not a cumulative-impact assessment.
- The 700-strong off-site workforce for substations and transmission (Eskom's own figure) generates its own housing, water, sanitation, traffic and socio-economic footprint — connected impacts that the DSR neither quantifies nor assigns to any assessment.
- Cumulative coastal, freshwater and avifaunal effects of the plant **plus** its evacuation corridors **plus** its construction works can only be understood when those components sit within one assessment. The current boundary makes the statutory cumulative-impact enquiry impossible to perform.

EG-5	**The DSR's grid-integration claims are internally contradictory and unsupported by any system or load-flow study**	ADEQUATE-INFORMATION FAILURE

DSR / SOURCE DSR §4.2.2.25 (p. 133) vs §6.4.2 (pp. 177–179); p. 175; §6.4.2.2

LEGAL ANCHOR EIA Regs GNR 982/2014 — adequate, accurate information; s 24

Contradiction 1 — line length.

For Thyspunt, Chapter 4 states "around 450 km of 400 kV lines" with "no delay… expected," while Chapter 6 and Table 6-5 state "around 1,400 km of 765 / 400 kV lines." For Bantamsklip the same report gives both "1,000 km" (Ch. 4) and "2,211 km" (Ch. 6). These are not roundings; they differ by a factor of roughly three and materially change the cost, timeline, footprint and feasibility of evacuation.

Contradiction 2 — transmission is decisive but excluded.

The DSR uses transmission feasibility as an express criterion to prefer Thyspunt (achievable before 2039) over Bantamsklip (not achievable), yet treats the same transmission as outside the assessment. A factor cannot be both determinative of the outcome and beyond the scope of enquiry.

Missing study.

The DSR admits the regional network is "severely constrained" and "would require substantial strengthening," but presents **no power-system study, no load-flow or stability analysis, and no transmission-development programme, cost or servitude position** to substantiate that a 5,200 MW injection can in fact be evacuated on the stated timeline. The reader is asked to accept feasibility on assertion. That does not meet the adequate-information standard the EIA Regulations require.

5. Schedule of questions the EIA must answer

Consistent with the function of a scoping comment, the Alliance places the following questions on the record. We ask that each be answered, with supporting documents and data, in the Final Scoping Report and the EIA. They are grouped by theme.

A. The permanent transmission / evacuation network

Q1. On what legal basis is a power station severed from the transmission network that is its sole reason for existing, for the purpose of environmental assessment?

Q2. Will the EIA assess the full 400 kV and 765 kV evacuation network (route options, servitudes, land-take, vegetation clearance, avifaunal collision risk, visual and heritage impacts) as part of this project? If not, why not?

Q3. How can the transmission network be excluded from this EIA when transmission feasibility is an express criterion used to select Thyspunt over Bantamsklip (DSR p. 175)?

Q4. Why does the Climate Change Impact Assessment (DSR p. 731) treat transmission as an "interdependent project component" for greenhouse-gas purposes, while every other specialist study excludes it? On what principled basis is the inclusion selective?

Q5. What is the current status of any NTCSA EIA, servitude acquisition, funding and construction programme for the 1,400 km of lines, and what is the consequence for the plant if that network is delayed or refused?

Q6. Will the Final Scoping Report commit to a single, integrated assessment (or formal consolidation) of generation and transmission, and if not, how will cumulative impacts be lawfully assessed across the split?

B. Construction-phase and temporary-works power supply

Q7. What is the construction power-supply strategy for the plant, and what is the peak and average electrical demand during site establishment, earthworks and main construction?

Q8. Will construction power be drawn from the existing (admittedly "severely constrained") 132 kV network? If so, what temporary reinforcement, substations and distribution lines are required, where, and with what impacts?

Q9. If construction power is to be generated on site, what is the installed diesel/gas capacity, fuel throughput, and the resulting air-quality and greenhouse-gas impact over the full construction period?

Q10. What is the electrical load of the temporary desalination plant (running continuously during earthworks at up to 11,700 m^3/day) and of construction dewatering, sand-pumping and aggregate-conveying systems?

Q11. What is the routing, footprint and environmental impact of the "distribution power lines" disclosed in Appendix G22 as running parallel to on-site access roads?

Q12. Why is "electrical power" listed as a defined construction activity (Table 10-1) yet given no power-supply description or impact assessment anywhere in the DSR?

C. Energy alternatives and need & desirability

Q13. Under which provision of NEMA, the EIA Regulations or DEA Guideline 5 is the absence of a "discrete footprint" a lawful basis for excluding a feasible and reasonable alternative from comparative assessment?

Q14. How can a renewable alternative be rejected for a diffuse footprint while the nuclear option's own 1,400 km transmission footprint, construction power and off-site works are excluded from the nuclear footprint? Will the EIA correct this asymmetry?

Q15. Where in the 744 pages is the levelised-cost-of-energy comparison between the nuclear option and a firmed renewable portfolio? If absent, will it be provided in the EIA, on what cost basis, and for what dates?

Q16. On what basis is "Nuclear" fixed as the "Preferred Energy Alternative" (Table 11-4) before any comparative environmental or cost assessment has been undertaken?

Q17. How does the Need-and-Desirability assessment address affordability to end users and tariff impact (GN 792; Constitution ss 24 and 27) without a single quantified cost figure?

Q18. Will the no-go alternative be assessed as a genuine baseline, including the consequences of redirecting equivalent capital and grid capacity, rather than dismissed as "not feasible" at scoping?

D. Cumulative and connected-activity impacts

Q19. How will the cumulative-impact assessment required by NEMA s 2(4)(vii) be performed when the transmission network, construction power supply, access roads, off-site camps and off-site emergency infrastructure are all outside the boundary?

Q20. Where will the socio-economic, water, sanitation, traffic and housing impacts of the 700-strong off-site substation and transmission workforce (Eskom's own figure) be assessed?

Q21. How will cumulative coastal, freshwater and avifaunal effects of the plant together with its evacuation corridors and construction works be assessed if those components are never brought within one assessment?

E. Internal consistency and supporting studies

Q22. Which figure is correct for the Thyspunt evacuation network — the "450 km" of DSR §4.2.2.25 or the "1,400 km" of §6.4.2 — and how is the threefold discrepancy in the same report to be reconciled?

Q23. Likewise for Bantamsklip: which is correct, "1,000 km" (Ch. 4) or "2,211 km" (Ch. 6)?

Q24. Will the EIA disclose the power-system study, load-flow and stability analysis underpinning the claim that 5,200 MW can be evacuated, and the basis for the "achievable before 2039" timeline?

Q25. What is the transmission-development cost, and how is it treated in the cost and need-and-desirability analysis of the project, given the admitted requirement for "substantial strengthening" of the regional network?

6. Changes to S&EIA Process

On the energy and grid grounds set out above, and as a contribution to the relief sought in the Alliance's principal submission, we ask that the following be conveyed to WSP and to the competent authority:

1. **Integrated assessment.** That generation and the transmission evacuation network be assessed within a single, integrated environmental assessment process — by amendment of this EIA's scope, or by formal consolidation with the NTCSA transmission EIA. A parallel, unconsolidated process is not acceptable, because it cannot deliver the cumulative-impact assessment NEMA requires.
2. **No EIA phase until the boundary is corrected.** That the DSR not be accepted, and the EIA phase not commence, until the battery limits are redrawn to include the transmission network, the construction-phase power supply and the other connected enabling activities presently excluded.
3. **Construction-power assessment.** That a defined construction power-supply strategy be scoped and assessed, including any temporary grid reinforcement, distribution lines and on-site generation, with their air-quality, greenhouse-gas and ecological impacts.
4. **Genuine alternatives comparison.** That the energy-alternatives assessment be reopened on a like-for-like basis — nuclear (with its full transmission and enabling footprint) against a firmed renewable portfolio — with a published levelised-cost comparison, before any preferred energy alternative is fixed.
5. **Reconciliation of contradictions.** That WSP reconcile, on the record, the 450 km / 1,400 km and 1,000 km / 2,211 km contradictions, and disclose the power-system study underpinning its evacuation and timing claims.
6. **Disclosure.** That the NTCSA transmission EIA status, servitude position, funding and programme be disclosed and brought within the I&AP process, so that affected parties are not required to register afresh for a severed component of the same development.

Appendix A — Documentary cross-reference schedule

For ease of verification, the key references relied upon, and the contradiction each establishes, are tabulated below. All references are to the proponent's own documents.

GROUND	REFERENCE	POINT ESTABLISHED
EG-1	DSR §4.1.3, pp. 105–106; App. G22 §3.3.3	Transmission beyond the HV yard expressly excluded from battery limits.
EG-1	PPR Pt 04, resp. 97/98/161/162/293	WSP states transmission is a separate NTCSA EIA.
EG-1	DSR p. 175; Table 6-5, p. 178	Transmission feasibility used to prefer Thyspunt over Bantamsklip.
EG-1	DSR CCIA, p. 731	WSP concedes transmission is an "interdependent project component."
EG-2	DSR Table 10-1, p. 485	"Electrical power" / "Utilities (…electricity…)" defined as construction activities.
EG-2	App. G22 §3.4.2.27	Temporary "distribution power lines" disclosed along access roads.
EG-2	DSR §4.2.2 (desalination)	Continuous temporary desalination at up to 11,700 m³/day during earthworks.
EG-3	DSR §6.4.4; Table 11-4, p. 709	Renewables dismissed for "no discrete footprint"; "Nuclear" fixed as preferred.
EG-3	DSR §5 (Need & Desirability)	No LCOE, no tariff impact, no cost comparison in 744 pages.
EG-4	DSR §4.1.4; plant-population table	Connected impacts (incl. 700 off-site transmission/substation workers) unassessed.
EG-5	DSR §4.2.2.25 vs §6.4.2	450 km vs 1,400 km (Thyspunt); 1,000 km vs 2,211 km (Bantamsklip).
EG-5	DSR §6.4.2.2	Network "severely constrained"; no system/load-flow study disclosed.

Prepared by Donald McGillivray, Energy Specialist, for the Thyspunt Alliance.
This specialist objection supplements and should be read with the Alliance's principal formal submission. All factual references are to the proponent's own documents.