

**WSP PROJECT NO.:** ZA0058322.7774  
**DFFE REFERENCE:** 14/12/16/3/3/2/2806

**Attention:** WSP

**Email:** [Nuclear-PP-EIA@wsp.com](mailto:Nuclear-PP-EIA@wsp.com)

29 May 2026

Dear WSP

**RE: COMMENTS ON THE DRAFT ENVIRONMENTAL SCOPING REPORT  
FOR THE PROPOSED NUCLEAR POWER PLANT (UP TO 5 200 MW)  
AT THYSPUNT AND BANTAMSKLIP**

## 1. INTRODUCTION

These comments are submitted on behalf of:

- The Southern African Faith Communities' Environment Institute (SAFCEI). SAFCEI is a registered non-profit organisation established by multi-faith environmental and social justice advocates to (among other things) confront environmental and socio-economic injustices, and to support and encourage faith leaders and their communities in Southern Africa to take action on eco-justice, sustainable living and climate change issues; and
- Earthlife Africa – Johannesburg (ELA-JHB). ELA-JHB is a non-governmental non-profit voluntary association established by environmental and social justice advocates to mobilise civil society around environmental issues in relation to people, and includes a Sustainable Energy and Climate Change Project that works to promote local and global environmental and social justice on sustainable energy and climate change issues. ELA-JHB is an autonomous branch of Earthlife Africa.

These submissions are made in response to the Draft Environmental Scoping Report (DSR) prepared by WSP on behalf of Eskom Holdings SOC Limited, dated April 2026, published for public comment in terms of section 24(5)(b)(ii) of the National

Environmental Management Act 107 of 1998 (NEMA) and Regulation 21 of the Environmental Impact Assessment Regulations, 2014<sup>1</sup> (the EIA Regulations).

These submissions address the following principal concerns:

- (a) the DSR's failure to identify or assess the social, economic and environmental impacts of a catastrophic, uncontrolled release of radiation as a key issue, and the deferral of such assessment to the NNR licensing process (section 3 below);
- (b) the absence of any cost, financing or affordability information at the scoping stage, and the premature conclusion that the project is 'economically justified' and exhibits 'strong long-term financial viability' despite the cost-benefit and cost-effectiveness analyses on which those conclusions depend being deferred to the EIA phase (section 4 below);
- (c) the imbalanced treatment of need and desirability, including the over-reliance on the IRP 2025 as dispositive of the project-specific assessment required under section 24O of NEMA, the inadequate engagement with the disadvantages of nuclear power (lead times, capital intensity and affordability implications for vulnerable consumers), the unexplored contested status of the 'baseload' framing, and the failure to engage with the NDP 2030's call for a thorough investigation into nuclear energy's costs, financing, safety and benefits before commitment (section 5 below);
- (d) the inadequate consideration of alternatives, in particular the exclusion of a renewables-plus-storage portfolio from comparative assessment on the basis that it lacks a discrete footprint, and the conclusory dismissal of the no-go alternative at the scoping stage on the basis of a false binary between nuclear and coal (section 6 below);
- (e) the absence of any final disposal solution for high-level radioactive waste in South Africa, and the inadequacy of the DSR's treatment of indefinite interim on-site storage of spent nuclear fuel in light of the NEMA principles of life-cycle responsibility, intergenerational equity and the precautionary approach (section 7 below);
- (f) the limitations of the Plant Parameter Envelope approach and the purported exclusion of radiological impact assessment from the EIA on the basis of a 2009 administrative statement that is internally contradictory, of questionable continuing legal currency, and inconsistent with the DFFE's statutory function under NEMA, including as borne out by the Radiological Impact Report (Appendix G.21), which is on its own terms confined to normal operations and short-term 'minor occurrences' and contains no accident-consequence assessment (section 8 below).

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<sup>1</sup> GNR 982 of 4 December 2014 (as amended).

## **2. LEGAL FRAMEWORK**

Section 24 of the Constitution of the Republic of South Africa, 1996 (the Constitution) provides that everyone has the right to an environment that is not harmful to health or well-being, and to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation, and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

NEMA is the framework legislation giving effect to the environmental right. The principles in section 2 of NEMA apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and (among other things) serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment. Section 2(4)(a)(vii) requires that ‘a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.’ Section 2(4)(a)(viii) requires that ‘negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.’ Section 2(4)(i) requires that ‘the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.’ Section 24O(1)(b) of NEMA requires the competent authority, when considering an application for environmental authorisation, to take into account all relevant factors, including (among others): any pollution, environmental impacts or environmental degradation likely to be caused; measures that may be taken to protect the environment from harm as a result of the activity which is the subject of the application; measures that may be taken to prevent, control, abate or mitigate any pollution, substantially detrimental environmental impacts or environmental degradation; and the ability of the applicant to implement mitigation measures.

The Scoping Report, which frames the environmental impact assessment that follows, must therefore be adequate to enable the competent authority to discharge its obligations. The objectives of the Scoping process are set out in Appendix 2 of the EIA Regulations. These include (among others):

- motivating the need and desirability of the proposed activity (clause 1(b));

- identifying and confirming the preferred activity and technology alternative through an identification of impacts, risks (including cumulative impacts) and a ranking process (clause 1(c));
- identifying key issues to be addressed in the assessment phase (clause 1(e)); and
- agreeing on the level of assessment to be undertaken (clause 1(f)).

Content requirements for a Scoping Report are set out in clause 2 of Appendix 2. Among other things, a Scoping Report must contain a Plan of Study (PoS) for undertaking the EIA process, including a description of the alternatives to be considered, aspects to be assessed by specialists, proposed assessment methodology, and the option of not proceeding (Appendix 2, clause 2(1)(h)).

### **3. FAILURE TO ADEQUATELY IDENTIFY OR CONSIDER IMPACTS OF A CATASTROPHIC NUCLEAR ACCIDENT**

The DSR does not identify, and contains no investigation or preliminary assessment of the social, economic or environmental consequences at either Thyspunt or Bantamsklip of, a catastrophic, uncontrolled release of radiation — such as a core meltdown with containment failure (a Fukushima- or Chernobyl-type scenario). Nor does it make provision for the assessment of same during the EIA phase. This is a critical omission.

Instead, the DSR (among other things):

- Briefly describes evolutionary safety enhancements following lessons learned from major nuclear accidents (including Fukushima and Chernobyl), indicates that the lessons learned were incorporated into the designs (enhanced defence-in-depth, improved materials and stronger safety systems), and states that modern reactor designs incorporate passive safety systems and features<sup>2</sup>.
- Further discusses the safety of nuclear power plants (with safety a central consideration in design, construction and operation), and indicates that these systems are designed to ensure reliable operation and minimise the likelihood of any release into the environment. A discussion follows on physical barriers, backup safety systems, training and preparedness, and rigid safety standards regulated by the NNR that Eskom would have to meet through a separate NNR licensing process. The DSR explains that a nuclear installation site license will require the submission of a site safety report that *‘evaluates critical environmental and safety factors— including seismic stability, population distribution, and meteorological*

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<sup>2</sup> DSR, section 3.4.3.

*conditions—to demonstrate that the proposed site can safely accommodate a nuclear facility*<sup>3</sup>.

- Includes a discussion on nuclear accidents, referring to a perceived misconception among the general public that a nuclear reactor can ‘explode as an atomic bomb’, and referring to the International Nuclear Event Scale (INES) developed by the International Atomic Energy agency (IAEA) to rate the severity of a nuclear accident. Fukushima and Chernobyl are indicated as having experienced Level 7 severity nuclear accidents (major accidents), with impacts including immediate deaths (Chernobyl), massive radioactive releases, widespread contamination and large-scale evacuations. Long term impacts are also indicated (thyroid cancers, radiation sickness and an exclusion zone still in place in respect of Chernobyl, and long term displacement and costly decontamination in respect of Fukushima).
- Discusses Nuclear Emergency Planning Zones (EPZ), the exact delineation of which is *‘yet to be determined by the NNR and will be discussed further in the ESIA report.’*<sup>4</sup> The DSR indicates that there are multiple factors that affect the severity of a nuclear emergency, including the nature of the accident, the size of the radiation ‘cloud’ etc.
- Public exposure to radiation is discussed in section 3.10.6, but does not deal with public exposure in the event of a catastrophic, uncontrolled release.
- Various preliminary impacts are identified in section 10.4. Regarding ‘Radiological impact on the public’ (rated as low significance before and after mitigation). The DSR indicates that the radiological impact report concludes that radiation exposure during ‘normal operations’ would remain well within regulatory safety limits<sup>5</sup>, while *[e]mergency preparedness measures will also be in place to manage unlikely accident scenarios and to prevent significant off-site impacts. Emergency preparedness and response for the proposed NPP is governed by strict regulatory requirements set by the NNR and DFFE. Emergency response planning is a mandatory component of the SSR and the ESIA, ensuring that credible accident scenarios are anticipated and managed in line with national legislation and international good practice.*<sup>6</sup>
- In Chapter 11 dealing with the Plan of Study, section 11.7.4 speaks to nuclear emergency planning and response, and—regarding potential accidents that could

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<sup>3</sup> DSR, section 3.10.

<sup>4</sup> DSR, section 3.10.3.

<sup>5</sup> DSR, p622.

<sup>6</sup> DSR, p623.

result in damage to a nuclear reactor core and irradiated/spent fuel storage— seems to suggest that **likelihood** of a radioactive release and potential off-site radiological consequences to members of the public and the environment will inform various emergency response measures.

Section 2(4)(i) of NEMA requires that the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment. Section 24 of NEMA requires procedures and applications for environmental authorisation to include investigation of *‘potential consequences for or impacts on the environment’* of the activity and assessment of the significance of those *‘potential consequences or impacts’*<sup>7</sup>.

The EIA Regulations require that a Scoping Report must contain all information set out in Appendix 2 thereof,<sup>8</sup> and that the competent authority must refuse the Scoping Report if it does not substantially comply with Appendix 2. Appendix 2 of the EIA Regulations in turn indicates that the objectives of the Scoping Stage include to identify the key issues to be addressed in the assessment phase, and to agree the level of assessment 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.<sup>9</sup> The Scoping Report is required to include details on (among other things) the impacts and risks which have informed the identification of each alternative, again including the nature, significance, consequence, extent, duration and probability of such identified impacts.<sup>10</sup> The EIA Regulations define ‘significant impact’ as meaning ***‘an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence’***<sup>11</sup> (emphasis added).

It is submitted that a catastrophic, uncontrolled release of radiation would clearly have ‘significant’ social, economic and environmental impacts or consequences’ that should have been identified as a key issue in the Scoping Report. The DSR itself states in relation to the precautionary approach (NEMA s2(4)(a)(viii)) and its application in a nuclear power

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<sup>7</sup> NEMA, section 24(4)(a)(iv) and (b)(i).

<sup>8</sup> EIA Regulations, reg 21.

<sup>9</sup> EIA Regulations, Appendix 2, item 1.

<sup>10</sup> EIA Regulations, Appendix 2, item 2.

<sup>11</sup> EIA Regulations, reg 1.

plant EIA that *'[c]entral to nuclear EIAs: low-probability, high consequence events (accidents, extreme events) must be considered even where uncertainty exists'*.<sup>12</sup>

It is submitted that the DSR (and Specialist studies) should have identified the risk of a catastrophic, uncontrolled release of radiation as a key issue, and should have included preliminary details on the associated impacts and risks, including their nature, significance, consequence, extent, duration and probability. Instead, the DSR's treatment of a potential severe accident is limited to generalised assurances about reactor safety, regulatory licensing and emergency preparedness, and defers the delineation of emergency planning zones and related emergency response measures to the NNR licensing process and the later environmental impact assessment phase. It does not investigate or assess these impacts and risks as required, and in particular fails to address the high-consequence (albeit low-probability) scenario of such a release, dealing with public exposure only for normal operations. The Radiological Impact Report submitted at scoping (Appendix G.21) does not alter this position: on its own terms it is *'an extensive summary of the radiological safety assessments included in the Bantamsklip and Thyspunt Site Safety Reports (SSRs)'* prepared for NNR site licensing, and its assessment is expressly confined to normal continuous discharges, short-term *'minor operational occurrences ... that can be kept under control'*, and *direct external radiation from structures*<sup>13</sup>. Its conclusion (section 1.10) is titled 'Significance rating of radiological impacts from normal NPP operation', and its significance categories are keyed exclusively to the regulatory dose constraint of 0.25 mSv/y and dose limit of 1 mSv/y for routine authorised discharges. The report contains no section, source term, dispersion analysis or consequence modelling for any accident scenario.

The Plan of Study should, in turn, have indicated the level of assessment to be undertaken in the EIA phase to determine the social, economic and environmental impacts and risks that a catastrophic, uncontrolled release of radiation would have on the preferred site through the life of the activity, again including their nature, significance, consequence, extent, duration and probability.

For the avoidance of doubt, the impact assessment called for here is not satisfied by an analysis of design-basis accidents, or of bounded beyond-design-basis accidents within the design envelope, both of which are addressed at the licensing stage as part of the demonstration of regulatory safety. What is required is the assessment of the social, economic and environmental consequences of an unbounded, uncontrolled release — a severe accident involving containment failure, or analogous event. The risk and consequences of such an event are also directly relevant to the no-go alternative discussed in section 6 below, that being the only alternative in which they do not arise.

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<sup>12</sup> DSR, p238. See Table 7-4 *Draft NSSD vs NEMA Principles (NPP EIA Context)*.

<sup>13</sup> Appendix G.21, section 1.1

#### 4. ABSENCE OF COST, FINANCING AND AFFORDABILITY INFORMATION, AND PREMATURE CONCLUSIONS ON FINANCIAL VIABILITY AND ECONOMIC JUSTIFICATION

The DSR contains no information on the capital cost, total project cost, financing structure, interest during construction, or potential electricity tariff implications of the proposed NPP.

When Interested and Affected Parties raised financial and economic concerns during public participation, the response was that *‘Eskom has not yet initiated a formal procurement process for the proposed NPP and, as such, detailed cost and funding information is not yet available’*<sup>14</sup>. The DSR confirms that *‘[d]etailed cost information is not yet available and will only be established once Eskom issues a formal request for proposals (RFP). Economic viability will be assessed during the EIA phase through Cost-Benefit Analysis and Macroeconomic Impact Studies.’*<sup>15</sup> The DSR also recognises that nuclear power plants are *‘capital-intensive infrastructure projects with extended development and construction periods, resulting in lower flexibility relative to generation technologies that can be deployed more rapidly.’*<sup>16</sup>

The underlying Socio-Economic Impact Assessment Baseline Report (Appendix G - the SEIA Baseline Report) confirms that *‘the economic assessment does not seek to provide definitive cost or benefit estimates’* and that the financial viability assessment *‘will evaluate capital costs, operating costs, projected revenues, and long-term sustainability using Cost-Benefit Analysis (CBA) and Cost-Effectiveness Analysis (CEA)’* during the EIA phase.<sup>17</sup>

Notwithstanding the express absence of cost data and the deferral of the CBA and CEA to the EIA phase, the SEIA Baseline Report nonetheless concludes that *‘[b]oth sites are expected to demonstrate strong long-term financial viability’* and that the project is *‘economically justified’*<sup>18</sup>. In Table 9-38, financial feasibility is rated *‘Very High Positive’* both before and after *‘enhancement measures’*, with *‘High’* confidence. The Report acknowledges that this conclusion rests on an assumption: *‘[g]iven the expected benefits and costs ... it is **assumed** that the project will generate sufficient returns on investment during its operational phase’*<sup>19</sup> (emphasis added). These conclusions are then carried into the DSR<sup>20</sup>.

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<sup>14</sup> DSR, Table 2-18, p46.

<sup>15</sup> DSR, Table 2-20, p47.

<sup>16</sup> DSR, p. 187.

<sup>17</sup> SEIA Baseline Report, section 9.2.1)

<sup>18</sup> SEIA Baseline report, sections 9.2.1 and 11

<sup>19</sup> SEIA Baseline report, sections 9.2.1.

<sup>20</sup> DSR, pp625 and 678.

A conclusion about financial viability is, by its nature, a conclusion about whether costs are outweighed by benefits over time. Where the cost information, the CBA and the CEA are themselves still to be done, the conclusion is an assumption. That the rating is ‘Very High Positive’ makes the absence of those inputs significant.

Section 2(4)(i) of NEMA requires that ‘*the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated.*’ For a project of this scale (up to 5 200 MW), capital expenditure will be of an order of magnitude that will ultimately be borne by electricity consumers and/or taxpayers, with financing costs capable of forming a significant proportion of the overnight capital cost depending on construction duration and cost of capital (which could also increase significantly in the event of construction delays and cost escalations). Cost and affordability are consequential aspects of the proposal. The Supreme Court of Appeal in *South Durban Community Environmental Alliance v Minister of Forestry, Fisheries and the Environment* [2025] ZASCA 134 (*South Durban Community Environmental Alliance*) confirmed that reliance on macro-level energy planning does not determine the assessment required for a specific project under NEMA, and that the competent authority must independently assess all relevant factors, including economic factors<sup>21</sup>. The absence of any cost or affordability information at the scoping stage means that the Plan of Study for EIA has been formulated without a baseline understanding of the project’s economic implications, which is inconsistent with the purpose of scoping under Appendix 2, clause 1(f) of the EIA Regulations, which requires agreement on the level of assessment to be undertaken.

The deferral is also difficult to reconcile with the DSR’s broader approach. The DSR presents numerous detailed specialist studies at the scoping stage but fails to address costs on the basis that no procurement process has commenced. The specialist studies necessarily rely on a defined project description (the Project Plant Envelope), and reasonable preliminary cost ranges can and should be derived from that envelope and from publicly available benchmarks for comparable reactor technologies. The international record for large nuclear new-build projects in recent decades (including Hinkley Point C in the United Kingdom) shows a pattern of significant cost escalation against original estimates, and is sufficiently well documented to constitute a foreseeable risk that scoping-phase economic assessment should engage with rather than defer.

The internal treatment of the financial feasibility impact compounds the difficulty. Table 9-38 lists as ‘Enhancement Measures’ the following: ‘*financial structure and cost of capital, construction risk management, project governance and procurement efficiency,*

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<sup>21</sup> At para 24.

*and long-term tariff and regulatory stability.* These are not measures that enhance a positive impact; they are factors that, if they go wrong, would turn the impact negative. The SEIA Baseline Report itself recognises this elsewhere: *‘[t]his significant capital demand is expected to exert upward pressure on interest rates’* and capital provisions for decommissioning *‘will play a critical role in determining the resulting electricity tariff’*<sup>22</sup>; and that during construction the project's financing needs *‘are likely to exert pressure on domestic capital markets, potentially crowding out private-sector investment and leading to higher interest rates’*<sup>23</sup>. That the same impact is rated ‘Very High Positive’ both before and after the listed factors indicates that the rating is not responsive to those risks.

Finally, the macroeconomic and fiscal assessment<sup>24</sup> addresses the project's broader economic footprint — contributions to GDP, capital formation, employment, household income, balance of payments and government revenue, including direct, indirect and induced effects. These are estimates of spillover benefits. They are not the same as, and are not a substitute for, information on the project's costs, financing and affordability (fiscal, utility and consumer). Spillover benefits do not, on their own, demonstrate that the project is financially viable or affordable.

It is accordingly submitted that:

- (a) The DSR and the SEIA Baseline Report should not, at the scoping stage, advance conclusions that the project is ‘economically justified’ or exhibits ‘strong long-term financial viability’, nor rate financial feasibility as ‘Very High Positive’ with ‘High’ confidence, in the absence of the cost information, CBA and CEA on which those conclusions depend. These conclusions and the associated rating should be withdrawn.
- (b) The ‘Enhancement Measures’ in Table 9-38 should be revisited. The items listed are risk factors, not enhancement measures.
- (c) The Plan of Study for the EIA should be amended to include:
  - (i) an independent assessment of overnight capital costs and total project costs, benchmarked against comparable international projects or other publicly available information<sup>25</sup>;

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<sup>22</sup> SEIA Baseline Report, section 9.2.2.2.

<sup>23</sup> SEIA Baseline Report, section 9.2.2.6.

<sup>24</sup> SEIA Baseline Report, sections 9.2.2 to 9.2.2.7, summarised in Table 9-39.

<sup>25</sup> The recently published IRP2025 and its supporting documents provided information on Overnight Capital Costs (OCC). This information included costs based on responses to a Request for Information issued by the then Department of Minerals and Energy (DMRE), as well as costs included in an EPRI report *Supply-*

- (ii) financing cost modelling, including interest during construction, for a range of realistic construction durations (including delayed construction scenarios);
- (iii) an assessment of the potential impact on electricity tariffs and the affordability implications for residential and industrial consumers, with particular attention to disadvantaged consumers;
- (iv) a comparison of the levelised cost of electricity (LCOE) from the proposed NPP against alternative generation portfolios (in particular renewable energy and storage); and
- (v) sensitivity or scenario analysis addressing the risks the SEIA Baseline Report itself identifies — capital cost pressure, financing cost pressure, decommissioning provisioning, and long-term tariff and regulatory stability — so that any subsequent rating of financial feasibility responds to those risks.

## 5. NEED AND DESIRABILITY: IMBALANCE AND OVER-RELIANCE ON THE IRP 2025

The DSR’s need and desirability analysis (Chapter 5) is structured around international obligations, national policy, and regional/local context. The most operationally significant anchor for the project is the IRP 2025’s inclusion of 5 200 MW of new nuclear capacity by 2039<sup>26</sup>, with the Nuclear Industrialisation Plan contemplating a potential expansion to 10 000 MW. While the structure aligns with the 2017 DEA Guideline on Need and Desirability, the content is materially one-sided.

The section emphasises nuclear power’s advantages, such as low lifecycle carbon intensity, high energy availability factor, baseload stability, long operational life, job creation, and industrial localisation. By contrast, well-documented disadvantages of nuclear power are either absent or inadequately addressed. The following matters in particular warrant attention:

- (a) Nuclear power has the longest lead time of any electricity generation technology. The DSR itself recognises<sup>27</sup> that nuclear power plants are ‘*capital-intensive infrastructure projects with extended development and construction periods, resulting in lower flexibility relative to generation technologies that can be deployed more rapidly*’, but does not engage with what this means for the project’s contribution to South Africa’s electricity supply needs in the short to medium term.

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*Side Cost and Performance Data for Eskom Integrated Resource Planning* (Updated Final Report Nov 2024). For the purposes of illustration:

- Using the RFI estimations relied upon in the IRP 2025, the OCC of a 5200 MW nuclear new build programme based on PWR technology would range between **R350 Billion and R402 Billion**.
- Using the EPRI report’s estimations, the OCC of a 5200 MW nuclear new build programme based on PWR technology would range between **R879 Billion and R920 Billion**.

<sup>26</sup> DSR, section 5.2.4.1.

<sup>27</sup> DSR, p187.

The DSR's own project timeline contemplates site preparation as taking 2-3 years and construction 5-8 years.<sup>28</sup> For a project whose contribution to the grid is unlikely to materialise within the next decade, the relationship between asserted need and realistic delivery timeframes is directly relevant to need assessment and is not engaged with.

- (b) The high capital intensity of nuclear power and its potential impact on electricity affordability for low-income and disadvantaged consumers is not addressed, despite section 2(4)(i) of NEMA requiring that 'the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment', and section 2(4)(c) requiring that 'environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.' Any electricity price increases resulting from the nuclear build programme would ultimately be borne by electricity users, and would bear most heavily on disadvantaged households.
- (c) The DSR's framing of 'baseload' as a fixed requirement, and its associated characterisation of nuclear as 'the only clean baseload power source'<sup>29</sup>, warrants particular scrutiny. The DSR presents the choice as 'nuclear plus renewables', with renewables characterised as inherently intermittent and weather-dependent and requiring large-scale storage or backup. The contemporary expert literature on power-system design increasingly contests the 'baseload' framing, on the basis that modern grids are designed around flexibility, dispatchability and demand-response rather than around continuous baseload supply, and that firm capacity needs can be met through diversified renewables combined with storage (battery, pumped hydro and other technologies) and demand-side management, often at lower cost and with shorter lead times than new nuclear. The DSR does not engage with this contested view at all; it presents the baseload framing as settled. Whether or not the contested view ultimately prevails on the facts, a fair and balanced Scoping Report on a nuclear project of this scale ought to engage with it.
- (d) The DSR correctly acknowledges that the NDP 2030 calls for '*a thorough investigation into nuclear energy's costs, financing, safety, and benefits as a potential baseload option, rather than an immediate commitment*'<sup>30</sup>, but immediately pivots to the IRP 2025, treating it as having superseded the NDP's cautionary position. The IRP 2025 is a planning instrument that reflects particular

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<sup>28</sup> DSR, p123.

<sup>29</sup> DSE, section 5.2.5.

<sup>30</sup> DSR, p139.

modelling assumptions and policy adjustments, and it does not — and cannot — substitute for the independent need and desirability assessment required under section 24O of NEMA. The thorough investigation that the NDP 2030 called for has not been conducted in this DSR.

- (e) The Supreme Court of Appeal's decision in *South Durban Community Environmental Alliance* bears directly on this issue. The court held that ‘macro-level planning does not determine the environmental impacts of a particular power plant’<sup>31</sup>. The court emphasised that ‘even when formulating the integrated resource plan and the Determination under the Electricity Regulation Act, the Minister was obliged to observe the approach ordered under NEMA’<sup>32</sup>, and that section 24O(1)(b)'s use of ‘may include’ does not render consideration of relevant factors elective; the controlling language is the obligatory ‘must’ in the introductory text<sup>33</sup>. In relation to need and desirability specifically, the court held that the IRP is ‘the country's long-term energy policy blueprint’ but that ‘NEMA ... requires evaluation of the potential environmental impacts of each listed activity that is to occur at a particular point in time’<sup>34</sup>, and that alternatives must be assessed by comparing their ‘social, environmental, technical, and economic impacts’ with sustainable development as the goal<sup>35</sup>. The DSR's reliance on the IRP 2025 as the operational answer to the need and desirability inquiry is inconsistent with the underlying principle that the competent authority must independently assess need and desirability rather than defer to macro-level energy planning, and must take all relevant factors into account.

It is accordingly submitted that:

- (i) The need and desirability section should be revised to include a balanced assessment that engages with the disadvantages of nuclear power — including long lead times, capital intensity, financing risks, affordability implications for vulnerable consumers, and the contested status of “baseload” framing — alongside its asserted advantages;
- (ii) The DSR should not present the IRP 2025 as dispositive of need and desirability, and should expressly conduct the project-specific, independent assessment that section 24O of NEMA requires;

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<sup>31</sup> Para 24.

<sup>32</sup> Ibid.

<sup>33</sup> Paras 26.

<sup>34</sup> Paras 52.

<sup>35</sup> Para 53.

- (iii) The DSR should engage substantively with the NDP 2030's explicit call for a thorough investigation into nuclear energy's costs, financing, safety and benefits before commitment, rather than treating that call as superseded; and
- (iv) The Plan of Study for the EIA should make provision for the cost, financing and affordability assessment set out in the section above on that topic. The current Economic Impact Assessment described in section 10.2 of the SEIA Baseline Report covers spillover macroeconomic impacts across construction, operation and decommissioning, but does not address project costing, financing structure, tariff implications or affordability; those omissions remain to be addressed.

## **6. INADEQUATE CONSIDERATION OF ALTERNATIVES**

The DSR's alternatives chapter (chapter 6 of the DSR) does not satisfy the requirements of section 24O of NEMA, Regulation 1 (definition of 'alternatives') and Appendix 2, clauses 1(c) and 2(1)(h)(i) of the EIA Regulations. The defects are of two kinds, addressed in turn below: the exclusion of a renewables-plus-storage portfolio from comparative assessment (section 6.1), and the conclusory dismissal of the no-go alternative (section 6.2). The substantive criticisms of the proposed NPP on which the alternatives analysis turns — cost, financing and affordability; lead time; the contested status of the 'baseload' framing; and the project-specific need and desirability assessment that section 24O of NEMA requires — are dealt with in detail in sections 4 and 5 above and are not repeated here.

### **6.1 Renewable Energy with Storage Alternatives**

The DSR purports to screen a 'renewables-led portfolio with firming' against the proposed NPP at Table 6-7<sup>36</sup>. On closer scrutiny, the screening is structurally incapable of finding the alternative to be reasonable and feasible, for the reasons that follow:

- (a) The DSR concludes that the renewables-plus-storage alternative '*does not have a discrete footprint, construction programme, or operational envelope that can be meaningfully assessed within a project-level EIA*'<sup>37</sup>. This conclusion is incorrect in law. Regulation 1 of the EIA Regulations defines 'alternatives' as 'different means of meeting the general purpose and requirements of the activity', expressly including alternatives to the technology to be used. The definition is means-neutral and does not require an alternative to be a single co-located facility. The IRP 2025 itself treats the renewables-and-storage portfolio as a planning unit, allocating large quantities of new onshore wind, utility-scale solar PV, distributed generation

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<sup>36</sup> DSR pp197–19.

<sup>37</sup> DSR p198.

and battery storage by 2039 alongside the 5 200 MW of nuclear. A portfolio that the IRP plans for is a portfolio that an EIA can comparatively assess.

- (b) The screening criteria in Table 6-7 are weighted to the proposed NPP. They include ‘synchronous inertia and grid-stabilising services’, ‘standalone firm generation facility’ and ‘fuel and supply security’ — characteristics of a single large thermal plant rather than outcomes required by the system as a whole. The criteria on which the renewables-plus-storage alternative is competitive or superior — levelised cost of electricity, time to first MW, capital-at-risk on cancellation, catastrophic-failure consequence severity, long-tail liabilities, and greenhouse-gas mitigation per Rand of capital — are absent. Those omitted criteria are addressed in the section on cost, financing and affordability and the section on need and desirability above and are not re-stated here; it follows that the screening in chapter 6 of the DSR cannot stand as the comparative assessment that section 24O of NEMA and the SCA’s reasoning in SDCEA (paras 24, 51–53) require.
- (c) The DSR’s broader framing that *‘the argument is not nuclear versus renewables, it is nuclear plus renewables; each playing a unique, mutually reinforcing role’*<sup>38</sup> assumes the answer to the question that the alternatives assessment must interrogate. Appendix 2, clause 1(c) of the EIA Regulations requires the scoping process to ‘identify and confirm the preferred activity and technology alternatives through an identification of impacts and risks and ranking process’, and clause 2(1)(h)(i) requires the Plan of Study to describe ‘the alternatives to be considered and assessed’. Neither requirement is satisfied by a framing that pre-empts the comparison.

## 6.2 The No-Go Alternative

The DSR’s treatment of the no-go alternative at section 6.4.7 of the DSR is also defective. Two points warrant emphasis.

- (a) The DSR rejects the no-go alternative on the basis that ‘Eskom must provide additional large-scale baseload power stations, either through nuclear power or through the development of additional coal fired power stations’ (DSR p.214). This is a false binary. The IRP 2025 itself contemplates approximately 105 000 MW of new generation capacity by 2039, of which nuclear is 5 200 MW (approximately 5 per cent); the balance is overwhelmingly composed of renewables, storage and gas-to-power. A ‘no-nuclear’ outcome under the IRP is not a ‘no-electricity’ outcome, and it is not a ‘coal’ outcome. The dismissal of the no-go alternative at the scoping stage is also premature: the EIA Regulations require the no-go alternative to be carried forward

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<sup>38</sup> DSR, at p.144.

to the EIA phase for substantive assessment as a baseline (Appendix 2, clauses 1 and 2(1)(h)(i), read with Regulation 1).

- (b) The no-go alternative is the only alternative in which the residual risk and consequences of a catastrophic, uncontrolled release of radiation — as canvassed in section 3 above — do not arise. The DSR’s no-go discussion does not engage with this dimension at all. Because that risk and its consequences must be assessed for the proposed activity (see section 3 above), they must equally feature in the no-go comparison, which is by definition the option in which the risk is avoided in its entirety. Their omission from the no-go analysis renders the comparative exercise required by Appendix 2 of the EIA Regulations incomplete.

It is accordingly submitted that:

- (i) the DSR’s conclusion that a renewables-plus-storage portfolio cannot be meaningfully assessed within a project-level EIA should be withdrawn. Section 24O of NEMA and Appendix 2, clauses 1(c) and 2(1)(h)(i) of the EIA Regulations require that this alternative be assessed in the EIA phase;
- (ii) the Plan of Study for the EIA should make express provision for a comparative assessment of the proposed NPP against a renewables-plus-storage portfolio sized to deliver functionally equivalent firm capacity, on the criteria identified in the section on cost, financing and affordability above (in particular sub-paragraph (iv) of the submission at the end of that section) and in the section on need and desirability above;
- (iii) the DSR’s dismissal of the no-go alternative at the scoping stage should be withdrawn, and the Plan of Study for the EIA should make express provision for a substantive no-go assessment against which the proposed NPP and any other alternative are to be compared. That assessment must include the avoided risk and consequences of a catastrophic, uncontrolled release of radiation as set out in section 3 above.

## **7. HIGH-LEVEL RADIOACTIVE WASTE: ABSENCE OF A FINAL DISPOSAL SOLUTION**

The DSR addresses radioactive waste management in the Radioactive Waste Management and Transport Scoping Study (Appendix G.22). The DSR acknowledges that low-level waste (LLW) and intermediate-level waste (ILW) will be disposed of at the Vaalputs facility in the Northern Cape, and that ‘*high level waste will be stored safely on site*’<sup>39</sup>.

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<sup>39</sup> DSR, p315.

This formulation obscures a fundamental unresolved problem. South Africa does not have a deep geological repository, does not have an approved site for one, and has no timeline for developing one. The National Radioactive Waste Disposal Institute (NRWDI), established under the NRWDI Act 53 of 2008, has responsibility for design and implement disposal solutions for all classes of radioactive waste, but no disposal facility for HLW has been constructed or authorised.

The proposed NPP, with an 80-year operational life and a decommissioning period thereafter, will generate spent nuclear fuel that will remain hazardous for tens of thousands of years or more<sup>40</sup>. The DSR's statement that HLW will be 'stored safely on site' describes interim storage, not final disposal. Section 2(4)(e) of NEMA requires that responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle. The life cycle of HLW extends far beyond the operational life of the NPP.

Indefinite interim on-site storage of spent nuclear fuel, with no identified disposal pathway, is inconsistent with the NEMA principles of intergenerational equity and the precautionary approach.

While the PoS at section 11.7.23 commits to a critical review of the current status of HLW management in South Africa and to addressing the life cycle of an HLW disposal facility and 'societal and other aspects' of HLW management, the proposed scope does not commit to a quantitative assessment of the costs of indefinite interim storage and ultimate disposal of HLW; of the institutional arrangements (including NRWDI's funding and capacity) required for custodianship across the intergenerational time horizon involved; of the risks attaching to interim storage of indeterminate duration; or of the project's alignment with the NEMA principles of life-cycle responsibility (section 2(4)(e)), intergenerational equity (section 2(4)(o)) and the precautionary approach (section 2(4)(a)(vii)). The DSR itself acknowledges that '*HLW endpoint planning has not received sufficient prominence in nuclear power decision-making*' and that the issue '*needs to be articulated more explicitly than previously.*'

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<sup>40</sup> The IAEA's *Storage and Disposal of Spent Fuel and High Level Radioactive Waste* report states that '*the main characteristics governing spent fuel and high level waste disposal are the long-lived radioactivity content of the spent fuel or HLW, its heat generation and its radiation level. The heat generation limits the amount of waste that can be disposed of in a given volume of rock. High radiation levels require that all waste handling is shielded and/or uses remote handling systems. And **the amount of long-lived radioactivity means that the safety of a repository is an issue that must be considered looking forward for tens to hundreds of thousands of years***' (at section E.1, para 16, p5). See: [https://www.iaea.org/sites/default/files/gc/gc50inf-3-att5\\_en.pdf](https://www.iaea.org/sites/default/files/gc/gc50inf-3-att5_en.pdf).

It is submitted that, given the intergenerational hazard horizon of HLW and the absence of any operational deep geological repository in South Africa (or, currently, anywhere in the world), descriptive treatment is insufficient to discharge the competent authority's obligations under NEMA. The specialist study's terms of reference should accordingly be expanded to include the quantitative cost, risk, institutional and intergenerational equity assessments identified above.

## **8. ASSUMPTIONS CONSTRAINING THE SCOPE OF ASSESSMENT**

### **8.1 The 'Plant Parameter Envelope Approach'**

The DSR adopts a Plant Parameter Envelope (PPE) approach, described in Chapter 4 and elaborated in the specialist Appendix K<sup>41</sup>. Because no reactor technology or specific design has been selected, the EIA *'will be technology neutral, meaning it will use parameters from multiple plant technologies and provide an assessment of the likely effects of the new NPP by using a bounding case'*<sup>42</sup>. The PPE combines PWR and SMR design parameters drawn from up to thirteen named reactor designs (Appendix K, section 3) and is described as ensuring that no individual reactor design would have a greater impact than what is assessed. It bears emphasising, however, that Appendix K frames this as an *objective* rather than a guarantee: *'It is the objective that the environmental and safety impact of the NNI [New Nuclear Installation] will be less than the environmental and safety impact determined by applying the limiting PPE at any specific site'*<sup>43</sup>.

The scoping stage is the appropriate — and, under the EIA Regulations, the required — point at which the assumptions, uncertainties and methodological limitations underpinning the assessment must be identified and addressed in the plan of study. Appendix 2 to the EIA Regulations requires a scoping report to set out (among other things) the methodology to be applied in the impact assessment phase, and any assumptions, uncertainties or gaps in knowledge. Section 2(4)(a)(vii) of the NEMA further requires that *'a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.'* Section 2(4)(a)(viii) requires that negative impacts on the environment *'be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.'* The PPE approach impermissibly defers material questions to the post-EIA licensing stage.

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<sup>41</sup> 'Plant Parameter Envelope for New Nuclear Power Plants at Coastal Sites' (Eskom Standard 331-763, Revision 1, November 2025).

<sup>42</sup> DSR, p106.

<sup>43</sup> Appendix K, p11.

The PPE approach introduces significant limitations that must be acknowledged and addressed in the Scoping Report and the assessment to follow. Specifically:

- First, the PPE is constructed from parameters supplied by the applicant, based on a combination of international sources, NNR requirements and European Utility Requirements. There is no independent verification by the competent authority or any external peer reviewer at the scoping stage that the chosen parameters genuinely represent the bounding case for all reactor technologies that may ultimately be deployed. Appendix K's 'Acceptance' page<sup>44</sup> records sign-off only by internal Eskom personnel; no record of NNR, IAEA, or independent peer review of the PPE is evident in the document. Moreover, Appendix K expressly states that *'the site-dependent PPE data was either based on a typical site as provided by the vendors (not a specific site and not the Eskom sites)'*<sup>45</sup>. The envelope was therefore not derived from the actual site characteristics of Bantamsklip or Thyspunt. The public is asked to accept on faith that the envelope is conservatively drawn, without the ability to test this assumption.
  
- Second, the PPE is provisional and open-ended. Appendix K states that the data 'is subject to change' and that the appendices *'shall not be construed as the exhaustive catalogue of the PPE and external event limiting values applicable to nuclear power plants and may be updated from time to time'*<sup>46</sup>. The list of reactor designs considered is itself non-exhaustive: *'The final technology/design that will be selected is not limited to the above-mentioned reactors'*<sup>47</sup>. A bounding envelope that is acknowledged to be neither final nor exhaustive cannot, without more, discharge the obligation under section 2(4)(a)(vii) of NEMA to apply a risk-averse and cautious approach in the face of uncertainty.
  
- Third, Appendix K contains an express fallback clause which effectively defers substantive impact assessment to the post-EIA licensing stage: *'should the selected plant design fall outside of the defined PPE, the impacts shall be identified, and it shall be demonstrated that it is acceptable in the nuclear installation licence application'*<sup>48</sup>. This is incompatible with the architecture of NEMA and the EIA Regulations, which require impacts to be assessed before environmental authorisation is granted. The competent authority cannot lawfully discharge its functions under section 24 of NEMA by accepting an assurance that any

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<sup>44</sup> At p13.

<sup>45</sup> At p11.

<sup>46</sup> At p11.

<sup>47</sup> Appendix K, p10.

<sup>48</sup> At p11.

exceedance of the envelope will be dealt with later, in a different forum (the NNR licensing process), governed by a different statute (the NNR Act).

- Fourth, and critically, the PPE approach addresses routine operational parameters and design-basis conditions. The DSR's PPE table (Section 4) identifies dose consequences for 'Normal' operation, 'Design Basis Accident' (DBA), and 'Severe Accidents (Beyond Design Basis Accidents — BDBA)<sup>49</sup> but provides no source term, no consequence modelling, and no dispersion analysis for either the DBA or the BDBA tier that the PPE itself nominates. Appendix K itself openly excludes source terms from its scope: *'The scope excludes details pertinent to the definition of the applicable source terms, as this will be dealt with separately'*<sup>50</sup>. Section 9.5.2 ('Gaseous (Post-Accident)' source term), 10.1.2 (post-accident liquid dose) and 10.3 (liquid source term) each refer the reader to a source term document that is not provided. The further and distinct question of whether the EIA adequately considers catastrophic, uncontrolled releases lying beyond the PPE's nominated accident categories is addressed separately in section 3 of this submission above.

The cumulative effect of these limitations is that the PPE, on its own terms and within its own nominated categories, does not place before the competent authority or the affected public any quantified accident-consequence content. Even the bounded categories the PPE itself defines (DBA and BDBA) are populated only by reference to a 'regulatory limit' and to source terms that the document declines to provide. This is a material gap in the assumptions and methodology disclosed at scoping, which must be remedied in the Plan of Study for EIA in accordance with Appendix 2 to the EIA Regulations and the precautionary principle in section 2(4)(a)(vii) of NEMA. The separate and broader question of catastrophic, uncontrolled releases is addressed in section 3 above.

## **8.2 The Co-operative Agreement between the NNR and the Department of Environmental Affairs and Tourism, the 2009 Explanatory Statement, and the Purported Exclusion of Radiological Impact Assessment from the EIA**

The DSR discloses a sequence of three documents which together are said to justify the exclusion of radiological impact assessment from the EIA process<sup>51</sup>:

- A 'Cooperative Governance Agreement' between the then-Department of Environmental Affairs and Tourism (DEAT), now the Department of Forestry,

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<sup>49</sup> Appendix K, section 9.3.

<sup>50</sup> Appendix K, p5.

<sup>51</sup> DSR, pp249–250.

Fisheries and the Environment (DFFE) and the National Nuclear Regulator (NNR), said to have been signed on 15 June 2006;

- A subsequent Co-operative Agreement, signed on 31 August 2007 (DEAT) and 6 September 2007 (NNR), and published under section 6(4) of the National Nuclear Regulator Act 47 of 1999 ('NNR Act') in Government Gazette No. 31232, Notice No. 759, on 18 July 2008. The DSR records that this 2007 Agreement 'superseded' the 2006 CGA<sup>52</sup> (a copy is appended to the DSR as Appendix A); and
- A 'Statement by the Director-General concerning the consideration of matters pertaining to nuclear safety in environmental impact assessment processes on nuclear installations', signed by the then-Director-General of DEAT, Ms Nosipho Ngcaba, dated 30 January 2009 (the DSR incorrectly cites this as 10 February 2009 at p.250). The statement is appended to the DSR as Appendix M.

The DSR relies primarily on the 2009 statement, not the 2007 Agreement, for the proposition that '*the DEA will not make a decision on the acceptability of radiological impacts*'<sup>53</sup>.

It is submitted that this institutional arrangement, whatever its administrative merits, cannot relieve the competent authority (the DFFE) of its statutory obligations under NEMA. Seven points are relevant:

- First, section 24O(1)(b)(i) of NEMA requires the competent authority to take into account 'any pollution, environmental impacts or environmental degradation likely to be caused.' Radiological contamination of the marine environment, terrestrial ecosystems, groundwater, agricultural land, and human populations plainly falls within this statutory mandate. The 2009 statement itself expressly accepts this proposition. The Director-General states that '*the broad definition of the environment together with the principles of the same Act, outlined in Chapter 1, and the inclusiveness of the elements (biophysical, cultural and socio-economic) that need to be considered in environmental sustainability result in the need for the DG in applications for Environmental Authorisations for nuclear installations to consider issues of nuclear safety, radiation and radiology*'<sup>54</sup>. The statement then proceeds, in its concluding paragraph, to declare that the DG will not in fact consider those issues. The statement is internally incoherent. It cannot serve as a lawful basis for excluding from the EIA matters which the statement itself acknowledges fall within the DFFE's NEMA mandate.

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<sup>52</sup> DSR, p250.

<sup>53</sup> DSR, p250.

<sup>54</sup> Appendix M, p.3, emphasis added.

- Second, the 2007 Agreement itself does not purport to effect any transfer of function. Article VIII of the Agreement is explicit: ‘No delegations have been made in terms of section 238 of the Constitution.’ The 2009 statement is consistent with this: the Director-General describes herself in the statement as ‘the delegated competent authority for the consideration of environmental authorisation applications.’ The function therefore remains with the DFFE. What the 2009 statement records is not a delegation but an administrative decision by the then-Director-General to decline to exercise a function which she expressly acknowledges she is statutorily required to exercise.
- Third, the 2007 Agreement, properly read, in fact contemplates that the DFFE will conduct EIA work in respect of nuclear installations. Article II of the Agreement records that DEAT (now DFFE) holds *lead responsibility* for ‘the issuing of Environmental Impact Assessment authorizations for construction and operation, where applicable, of nuclear installation in terms of the NEMA or ECA,’ with the NNR allocated a *support* role. The Agreement therefore contradicts, rather than supports, the proposition that radiological impacts are to be excluded from the EIA.
- Fourth, the 2009 statement is not subordinate legislation. It is not a regulation made under NEMA or the NNR Act. It was not gazetted. It is an administrative decision letter issued by a Director-General. It cannot lawfully amend, override, or narrow the substantive content of section 24O of NEMA or any other provision of NEMA or the EIA Regulations made thereunder. To the extent the DSR proceeds as if the 2009 statement is binding on the current competent authority, it elevates an administrative communication to a status it does not enjoy.
- Fifth, the 2009 statement is now seventeen years old. It expressly references ‘Section 33(1) of the Environment Conservation Act No. 73 of 1989 and Sections 42(1)(a) of National Environmental Management Act No. 107 of 1998’ (Appendix M, p.6), and was issued in the context of the EIA Regulations then in force under those provisions. NEMA has since been substantially amended, the Environment Conservation Act provisions in question have been repealed, and the current EIA Regulations of 2014 (as amended) have replaced the regulatory framework under which the 2009 statement was issued. The continued legal currency of the 2009 statement, as applied to an EIA being scoped in 2026, is open to serious question.
- Sixth, the legal reasoning advanced in the 2009 statement is, with respect, misconceived. The statement invokes the principle that ‘*legislation related to a specific matter (for example, nuclear installations) take[s] precedence over*

*legislation of a general nature (for example, environmental management)*<sup>55</sup> — that is, the *generalia specialibus non derogant* maxim. That maxim applies only to resolve genuine conflicts between statutory provisions. There is no conflict between NEMA and the NNR Act: they impose complementary obligations on different organs of state, exercising different functions, against different criteria, in different fora. A nuclear installation requires both a nuclear authorisation under the NNR Act *and* an environmental authorisation under NEMA. The DG's invocation of *generalia specialibus* to subtract radiological consideration from NEMA's reach is a category error: there is no statutory conflict to resolve, only two distinct statutory duties to be discharged.

- Seventh, while the Preamble to the 2007 Agreement recognises the NNR as ‘the lead authority in the regulation of radiation hazards with a view to protecting persons, property and the environment against nuclear damage,’ this is not synonymous with exclusive authority over the assessment of the environmental and socio-economic consequences of radiological release. The NNR's mandate under the NNR Act is fundamentally different from the DFFE's mandate under NEMA. The NNR assesses nuclear safety, reactor design adequacy, and site suitability against prescribed nuclear safety standards and the statutorily defined concept of ‘nuclear damage’. It does not assess the full range of environmental, socio-economic and cumulative impacts of a radiological release on affected communities, ecosystems, tourism economies, agriculture, fisheries, and the broader public interest — all of which fall squarely within the NEMA mandate and engage the NEMA section 2 principles, including the precautionary principle (s 2(4)(a)(vii)), the duty to anticipate and prevent negative impacts (s 2(4)(a)(viii)), the social, economic and environmental impacts principle (s 2(4)(i)), and the intergenerational equity principle (s 2(4)(o)).

The DSR's approach effectively allows the NNR's regulatory safety framework to define the outer boundary of the NEMA assessment — an outcome that is unsupported by the text of the 2007 Agreement, contradicted by the express acknowledgment in the 2009 statement that NEMA requires the DG to consider nuclear safety, radiation and radiology, and inconsistent with the DFFE's statutory function under NEMA. It must be corrected.

The relevance of this point at the scoping stage is direct. The Plan of Study for EIA (Chapter 11) does not indicate that a worst-case accident scenario assessment will be undertaken during the EIA phase. This is a material deficiency. Appendix 2 to the EIA Regulations requires the Scoping Report to identify the issues to be assessed and the methodology to be applied, and to disclose assumptions, uncertainties and gaps in

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<sup>55</sup> Appendix M, p.6.

knowledge. While Chapter 11 of the DSR lists ‘radiological impacts — radiological public dose and emergency planning and response’ as an issue to be studied, the specialist Radiological Impact Report submitted with the DSR (Appendix G.21) demonstrates that this is, in substance, confined to normal-operations public dose assessment, and that no accident-consequence assessment is in fact contemplated for the EIR phase. This is a material deficiency. Appendix 2 to the EIA Regulations requires the Scoping Report to identify the issues to be assessed and the methodology to be applied, and to disclose assumptions, uncertainties and gaps in knowledge. The DSR’s implicit assumption that radiological accident consequences fall outside the EIA — derived from a 2009 administrative letter that is itself internally contradictory and of questionable continuing legal currency — is precisely the kind of methodological assumption that must be exposed and tested at scoping, before it becomes embedded in the EIR. We submit that the PoS must explicitly provide for an independent assessment (not constrained by the NNR process) of the environmental, human health, and socio-economic consequences of a catastrophic, uncontrolled release of radiation at the preferred sites, including modelling of radiological dispersion, population exposure, agricultural contamination, marine ecosystem impacts, and long-term exclusion zone consequences. The 2009 statement supports this submission: it expressly accepts that the broad NEMA definition of ‘environment’ and the NEMA section 2 principles ‘*result in the need for the DG ... to consider issues of nuclear safety, radiation and radiology*’<sup>56</sup>. The Plan of Study should reflect that statutory need.

## 9. CONCLUSION

For the reasons set out above, it is submitted that the Draft Scoping Report in its current form does not comply with the requirements of NEMA and the EIA Regulations, and is inadequate to frame the EIA process to follow. The principal deficiencies are:

- (a) the DSR fails to identify the risk and consequences of a catastrophic, uncontrolled release of radiation as a key issue, and fails to include preliminary details on the associated impacts and risks as required by Appendix 2 of the EIA Regulations. Its treatment is limited to generalised assurances about reactor safety, regulatory licensing and emergency preparedness, and defers the delineation of emergency planning zones and substantive accident-consequence assessment to the NNR licensing process and the later EIA phase. This is inconsistent with section 24O of NEMA and with the precautionary approach required by section 2(4)(a)(vii) of NEMA;
- (b) the DSR and the SEIA Baseline Report advance conclusions that the project is ‘economically justified’ and exhibits ‘strong long-term financial viability’, and rate

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<sup>56</sup> Appendix M, p3.

financial feasibility as ‘Very High Positive’ with ‘High’ confidence, in the absence of the cost information, capital cost estimates, financing structure, cost-benefit analysis and cost-effectiveness analysis on which those conclusions depend. The factors listed as ‘Enhancement Measures’ in Table 9-38 are risk factors, not enhancement measures, and the rating is unresponsive to the very risks the SEIA Baseline Report itself identifies;

- (c) the need and desirability analysis is materially one-sided. It emphasises nuclear power’s asserted advantages while inadequately engaging with the project’s long lead time, capital intensity, affordability implications for disadvantaged consumers, and the contested status of the ‘baseload’ framing. It treats the IRP 2025 as having superseded the NDP 2030’s explicit call for a thorough investigation into nuclear energy’s costs, financing, safety and benefits, and relies on the IRP 2025 as dispositive of the project-specific need and desirability assessment which section 24O of NEMA requires the competent authority to undertake independently;
- (d) the alternatives analysis does not satisfy the requirements of section 24O of NEMA and Appendix 2, clauses 1(c) and 2(1)(h)(i) of the EIA Regulations. A renewables-plus-storage portfolio is incorrectly excluded from comparative assessment on the basis that it lacks a discrete footprint, the screening criteria in Table 6-7 are weighted to the proposed NPP, and the no-go alternative is dismissed at the scoping stage on the basis of a false binary between nuclear and coal and without engaging with the avoided risk and consequences of a catastrophic, uncontrolled release of radiation;
- (e) the treatment of high-level radioactive waste obscures a fundamental unresolved problem. South Africa has no operational deep geological repository, no approved site for one, and no timeline for developing one. The DSR’s statement that high-level waste will be ‘stored safely on site’ describes interim storage of indeterminate duration, not final disposal, and the Plan of Study does not commit to a quantitative assessment of the costs, institutional arrangements, risks or intergenerational equity implications of that position;
- (f) the Plant Parameter Envelope approach defers material assumptions, uncertainties and methodological limitations to the post-EIA licensing stage. The envelope is constructed from applicant-supplied parameters without independent verification, is acknowledged to be neither final nor exhaustive, was not derived from the actual site characteristics of Thyspunt or Bantamsklip, and provides no source term, consequence modelling or dispersion analysis for either the Design

Basis Accident or Beyond Design Basis Accident categories that the envelope itself nominates; and

- (g) the DSR purports to exclude radiological impact assessment from the EIA on the basis of a 2009 administrative statement that is internally contradictory, of questionable continuing legal currency, predicated on a misconceived application of the *generalia specialibus non derogant* maxim, and inconsistent with both the text of the 2007 Co-operative Agreement and the DFFE's statutory function under section 24O of NEMA. The Radiological Impact Report submitted at scoping (Appendix G.21), being expressly framed as a summary of the NNR Site Safety Reports and confined to normal-operations dose against the NNR's 0.25 mSv/y dose constraint, confirms this deficiency: no accident-consequence assessment, source term or dispersion analysis is undertaken or proposed.

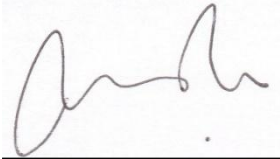
SAFCEI and ELA-JHB accordingly request that:

- (a) the deficiencies set out above be addressed during the EIA phase, and that the Plan of Study for the EIA be amended to reflect this in the specific respects set out in each of the substantive sections above. In particular:
  - (i) the risk and consequences of a catastrophic, uncontrolled release of radiation at each preferred site be assessed in the EIA phase as a key issue (going beyond design-basis and bounded beyond-design-basis accidents addressed at the licensing stage), including modelling of radiological dispersion, population exposure, agricultural contamination, marine ecosystem impacts, and long-term exclusion zone consequences, and their nature, significance, consequence, extent, duration and probability;
  - (ii) the conclusions in the SEIA Baseline Report and the DSR that the project is 'economically justified' and exhibits 'strong long-term financial viability', and the associated 'Very High Positive' rating with 'High' confidence in Table 9-38, be withdrawn pending the cost information, cost-benefit analysis and cost-effectiveness analysis on which they depend; the 'Enhancement Measures' in Table 9-38 be revisited as the risk factors they in fact are; and the Plan of Study be amended to include the independent capital cost assessment, financing cost modelling, tariff and affordability assessment, LCOE comparison and sensitivity analysis set out at the end of section 4 above;
  - (iii) the need and desirability section be revised to engage substantively with the disadvantages of nuclear power, with the contested status of the 'baseload' framing, and with the NDP 2030's explicit call for a thorough investigation before commitment; and that the IRP 2025 not be presented as dispositive of

- need and desirability, but rather as one input into the project-specific assessment required by section 24O of NEMA;
- (iv) the DSR's conclusion that a renewables-plus-storage portfolio cannot be meaningfully assessed within a project-level EIA be withdrawn; and the Plan of Study make express provision for (A) a comparative assessment of the proposed NPP against a renewables-plus-storage portfolio sized to deliver functionally equivalent firm capacity on the criteria set out in sections 4 and 5 above, and (B) a substantive no-go assessment, including the avoided risk and consequences of a catastrophic, uncontrolled release of radiation, against which the proposed NPP and any other alternative are to be compared;
  - (v) the terms of reference for the Radioactive Waste Management and Transport Specialist Study (section 11.7.23 of the Plan of Study) be expanded to include a quantitative assessment of (A) the costs of indefinite interim storage and ultimate disposal of high-level waste, (B) the institutional arrangements required for custodianship across the intergenerational time horizon involved (including NRWDI's funding and capacity), (C) the risks attaching to interim storage of indeterminate duration, and (D) the project's alignment with the NEMA principles of life-cycle responsibility (s 2(4)(e)), intergenerational equity (s 2(4)(o)) and the precautionary approach (s 2(4)(a)(vii));
  - (vi) the methodological limitations of the Plant Parameter Envelope approach (as set out in section 8.1 above) be expressly acknowledged in the Scoping Report and addressed in the Plan of Study, including disclosure of the absence of independent verification, the provisional and non-exhaustive character of the envelope, and the express deferral of any out-of-envelope case to the licensing stage; and that source-term, consequence and dispersion modelling for the Design Basis Accident and Beyond Design Basis Accident categories that the envelope itself nominates be brought within the EIA;
- (b) the position recorded in the 2009 Director-General's statement, to the effect that the DFFE will not consider the acceptability of radiological impacts, not be relied upon as a basis for excluding radiological impact assessment from the EIA. Such assessment should be undertaken in the EIA phase as an independent NEMA assessment, not constrained by the NNR licensing process (and not satisfied by the existing Radiological Impact Report (Appendix G.21), which is confined to normal-operations dose against NNR site-licensing criteria), in line with the 2007 Co-operative Agreement, the 2009 statement's own acknowledgement that NEMA requires the consideration of nuclear safety, radiation and radiology, and the DFFE's statutory function under section 24O of NEMA; and

- (c) SAFCEI and ELA-JHB's comments be considered by WSP and Eskom in finalising the Scoping Report, and by the DFFE in deciding whether to accept the Scoping Report under regulation 24 of the EIA Regulations.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Adrian Pole', is written over a light grey rectangular background. The signature is fluid and cursive.

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Adrian Leonard Pole