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Re: SAFCEI & ELA-JHB COMMENT ON NERSA'S CONCURRENCE WITH THE MINISTERIAL DETERMINATION ON THE PROCUREMENT OF 2 500MW GENERATION CAPACITY FROM NUCLEAR

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A. INTRODUCTION & EXECUTIVE SUMMARY

1. These comments have been prepared for and are submitted on behalf of the Southern African Faith Communities' Environment Institute (SAFCEI) and Earthlife Africa – Johannesburg (ELA-JHB).
2. SAFCEI is a registered non-profit organisation that was 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. SAFCEI includes an Energy and Climate Justice Programme that focusses on climate change and energy.
3. 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.
4. The National Energy Regulator of South Africa (NERSA) invites the public to comment on its prospective concurrence with a Ministerial determination on the procurement of 2 500MW of new generation capacity from nuclear.¹ NERSA states that the determination by the Minister of Mineral Resources and Energy ('the Minister') is in line with Decision 8 of the Integrated Resource Plan for Electricity (IRP2019),² and that the determined capacity will reach commercial operation in the time horizon beyond 2030. NERSA states further that this capacity is to provide clean baseload capacity in response to approximately 24 100MW of coal capacity being decommissioned, as well as to maintain supply-demand balance and improve energy security.

¹ NERSA *Invitation to Comment on the concurrence with the Ministerial Determination on the Procurement of 2 500MW of new generation capacity from nuclear.*

² GN1360 of 18 October 2019.

5. Based on realistic estimates, the procurement of 2 500MW of new capacity from nuclear is likely to cost about R330 billion (excluding costs of finance and end-of-life decommissioning costs).³ Having regard to the parlous state of the South African economy (exacerbated by the COVID-19 pandemic) and Eskom's financial woes, and given that the South African electricity user and taxpayer will ultimately have to bear these costs (regardless of the funding model adopted), the proposed determination is of immense public importance to current and future generations.
6. Section B of this comment raises the issue of inadequate information having been provided to the public for this consultation process. Apart from reference to the IRP2019 and certain assumptions stated in NERSA's notice and consultation paper, no other information that should serve as the basis for a lawful concurrence decision has been made publicly available by NERSA. It is not known what information served before the Minister in making his determination decision, or whether this information was provided to NERSA to inform its decision-making, nor is it known what the Minister's reasons for his determination decision were, or whether these reasons were even provided to NERSA. Not only is it necessary for a fair process that SAFCEI and ELA-JHB (and other I&APs) be provided with relevant information that served before the Minister in making his decision, and the reasons therefor, but it would render the process irrational if the Minister, in seeking NERSA's concurrence in his determination, failed to first provide such information and reasons to NERSA to allow it to properly consider whether to concur. Furthermore, s34 of the Electricity Regulation Act (ERA)⁴ empowers the Minister to make determinations 'in consultation with' NERSA. Simply asking NERSA to concur in the Minister's determination (without saying why) would fall short of the required consultation. The failure to provide the aforesaid information, and the reasons for the Minister's decision, to stakeholders materially hinders the

³ According to Prof Thomas '[i]f we discount abandoned projects, projects using old technology, and projects where up to date cost estimates are not available, for the ones where construction has actually started, the average is about US\$8800/kW, 75% higher than the Ingerop estimate. These four projects are still at least 1-6 years from completion and all experience suggests final costs will be even higher.' (Annexure A, section 4.1). Applying a cost of US\$8,800/kW to 2 500MW of new nuclear electricity generation capacity at a 15 to 1 exchange rate, the proposed new nuclear programme will cost approximately R330 billion (excluding unanticipated cost escalations, costs of finance and decommissioning costs).

⁴ 4 of 2006.

ability of SAFCEI and ELA-JHB (and other I&APs) to make meaningful representations, and renders the public participation process procedurally unfair and potentially reviewable.

7. Section C of this comment addresses the Minister's section 34 determination.
8. Subsection C1 points out that the s34 determination signed by the Minister does not contain any determination that new electricity generation capacity is needed and that a percentage of that new capacity is to be generated from nuclear power. As a result, the determination (which the Minister has asked NERSA to concur in) does not comply with s34(1) of the ERA. This is a significant concern given that our Courts have held that s34(1) of the ERA operates as the legislative framework by which any decision that new electricity generation capacity is required is made. The failure to determine that new electricity generation capacity is needed and that a percentage of that new capacity is to be generated from nuclear power effectively precludes NERSA from independently applying its mind to this critical preliminary aspect (whether 2 500MW of new generation capacity from nuclear power is needed), and also precludes the public from making meaningful representations on this issue. Section 34(1)(a) and (b) of the ERA are thus the critical decision points relating to decisions regarding the need for new electricity generation capacity, and the Minister has failed or elected not to exercise this power in making the determination. In the absence of the Minister exercising this power, and NERSA thereafter concurring in the exercise of that power, no lawful determination has been made that 2 500MW of new nuclear electricity generating capacity is needed. Therefore, the basis for making further determinations relating to (among other things) procurement of this new generation capacity is absent. The Minister's determination decision thus skips this material and significant decision point, and is therefore fatally defective.
9. Subsection C2 highlights that the Minister's determination decision to commence the process to procure new nuclear energy generation capacity of 2 500MW 'as per decision 8' of the IRP2019 also appears to misinterpret the IRP2019 decision to commence preparations for a nuclear new build programme to the extent of 2 500 MW at a pace and scale the country can afford. This high-level policy 'decision' contained in

the IRP2019 does not state that a process for the procurement of 2 500 MW of new nuclear energy generation should commence, nor does it allocate 2 500MW of new electricity generation capacity to nuclear. The IRP2019 simply includes a policy decision that preparations for a new nuclear build programme to the extent of 2 500MW should commence, and at a pace and scale that the country can afford. If the Minister was going to base his determination on a consideration of this policy decision, that policy decision required him to first satisfy himself (before making any s34 determination to commence procurement) that procurement of 2 500MW of new nuclear generation capacity was at a pace, scale and cost affordable to the country. There is no indication that the Minister has provided any information or reasons in this respect to NERSA, and certainly no such information has been provided to SAFCEI and ELA-JHB (and other I&APs).

10. Section C3 discusses the nature of the IRP2019. Based on a correct understanding of the IRP2019, decision 8 sets out a policy decision (made by way of a policy 'adjustment' by government and not generated as a 'least cost' option by the IRP process) indicating that the Department of Mineral Resources & Energy (DMRE) would commence preparations for (not procurement of) a nuclear build programme. In light of the above, it is submitted that the IRP2019 only commits (on a policy level) to commencing preparations for a nuclear build programme to the extent of 2 500MW at a pace and scale that the country can afford, and does not commit to a new nuclear build programme itself. Notwithstanding the above, it is submitted that whatever policy decision may have been made and recorded in the IRP2019 is not binding on NERSA's concurrence decision (which should not be fettered by the IRP2019). While the IRP2019 and other government policy decisions are relevant considerations that NERSA may take into account, NERSA's concurrence decision also requires the consideration and balancing of a number of other relevant considerations. Indeed, in terms of section 10 of the National Energy Regulator Act (NERA),⁵ which is applicable to NERSA's decision whether or not to approve the Minister's s34 determination, NERSA's decision must be

⁵ 40 of 2004, s10(1)(d), (e) and (f).

based on “*facts and evidence*”, which together with the reasons for its decision must be summarised in a written document.

11. Section D sets out relevant considerations that it is submitted NERSA should take into account in making any concurrence decision. Given the information vacuum within which the public has been invited to comment on NERSA’s concurrence with the Minister’s determination, SAFCEI and ELA-JHB commissioned nuclear energy policy expert Prof. Steve Thomas to provide expert input on various technical and economic aspects relating to the proposed new nuclear build programme within the context of NERSA’s prospective concurrence decision, with specific focus on:
 - the technologies that might be available in the time-frame (i.e. technologies that are expected to be ready for commercialization by 2030);
 - the potential economic benefits (having regard to the record of construction in terms of cost and construction time for commercially available large reactors, as well as progress with small modular reactor (SMR) designs that might be ready for commercialization by 2030); and
 - the contribution a new nuclear build programme might make to electricity system resilience (positive or negative).

Prof. Thomas concludes based on his expert analysis, and in light of the objects of the ERA, that ‘NERSA should not concur with the Minister’s decision to commence the process to procure the new nuclear energy generation capacity of 2,500MW’. Prof. Thomas’s submissions are annexed to these comments (see Annexure A), and should be read as if specifically incorporated herein.

12. Section E contains SAFCEI and ELA-JHB’s answers to the questions posed by NERSA in its consultation paper.
13. Section F confirms that SAFCEI and ELA-JHB would like to make oral representations to the Regulator in public hearings to be held after the closure of the written comments period.

B. INADEQUATE INFORMATION PROVIDED FOR MEANINGFUL PARTICIPATION

14. It is submitted that inadequate information has been made available to enable SAFCEI and ELA-JHB (as well as other interested and affected parties (I&APs)) to participate meaningfully in the public consultation process.
15. The only information made available to the public by NERSA includes:
 - An invitation to comment on the concurrence of NERSA with the Minister's nuclear procurement determination;
 - The Minister's s34 nuclear procurement determination; and
 - NERSA's consultation paper on concurrence with the Ministerial determination on the procurement of 2 500MW new electricity generation capacity from nuclear.
16. It is not known what information served before the Minister in making his determination decision, or whether this information was provided to NERSA to inform its decision-making, nor is it known what the Minister's reasons for his determination decision were, or whether these reasons were even provided to NERSA.
17. We note that not only was it necessary for a fair process that SAFCEI and ELA-JHB (and other I&APs) were provided with relevant information that served before the Minister in making his decision, and the reasons therefor, but it would render the process irrational if the Minister, in seeking NERSA's concurrence in his determination, failed to first provide such information and reasons to NERSA to allow it to properly consider whether to concur. Furthermore, s34 of the ERA empowers the Minister to make determinations 'in consultation with' NERSA. The determination would fall short of the required consultation if the Minister is simply asking NERSA to concur without the Minister providing such information and reasons to NERSA.
18. It is therefore essential for a fair and rational s34 ERA decision-making process that:

- a. the information that served before, and informed, the Minister's decision and the reasons therefore, be provided to I&APs (including SAFCEI and ELA-JHB) in order to allow them to properly understand the basis for and reasons why the Minister has made the determination;
 - b. I&APs (including SAFCEI and ELA-JHB) are thereafter given an opportunity to make representations to NERSA in respect of that information and reasons; and
 - c. to the extent that the Minister has not provided the information and reasons to NERSA, that the Minister provide those to NERSA so that NERSA can consider whether to concur based on consideration of the Minister's reasons for taking the decision and the information that informed the Minister's decision.
19. In the absence of the Minister's reasons for his decision, and given that the information that informed the Minister's decision has not been provided, one can nevertheless reasonably infer (or it is at least likely) that the Minister at least had regard to the following:
- a. the 'resource plan established by the national sphere of government to give effect to national policy',⁶ given the reference in the Minister's s34 determination to the IRP2019 (discussed in more detail in section C below); and
 - b. the responses received to a Request for Information (RFI) issued by the DMRE in June 2020 in respect of its proposed nuclear new build programme⁷ which, according to press reports, was issued to 'assess market appetite for the development of small modular nuclear reactors and to enable the department to assess the pace and scale at which such a programme should proceed'.⁸
20. The NERSA invitation and consultation paper provides some background information (including various assumptions made) to the s34 nuclear procurement determination, but primarily consists of a series of questions covering a broad range of topics. No underlying information that may serve before NERSA in making its decision on

⁶ Electricity Regulation Act of 2006, s1.

⁷ Request for Information in Respect of the Nuclear New Build Programme.

⁸ See: https://www.miningweekly.com/article/dmre-to-test-market-appetite-for-2-500-mw-of-small-nuclear-reactors-2020-05-07/rep_id:3650. See also: <https://www.polity.org.za/article/dmre-to-test-market-appetite-for-2-500-mw-of-small-nuclear-reactors-2020-05-07>.

concurrence has been made available to the public. This lack of information means that the public are expected to participate in the consultation process and attempt to answer questions in an information vacuum, and are precluded from evaluating, seeking expert advice on, and/or providing comment on whatever additional information may be serving before NERSA. This is procedurally unfair and irrational, it defeats the very purpose for which the NERA and the Promotion of Administrative Justice Act (PAJA)⁹ require public participation in respect of section 34 decisions.

21. An attempt was made by SAFCEI and ELA-JHB's attorneys on 14 January 2021 to telephone the NERSA contact person indicated in the Notice and Consultation Paper to clarify whether any other information or documents relating to the public consultation process were available. However, the automated voice message indicated that NERSA staff were working remotely due to the COVID lockdown restrictions, and provided a contact email address. An email was sent to this address (and to the contact email address indicated in the NERSA documents) on the same date, seeking clarity on whether additional documents were available, and if so requesting that same be emailed (alternatively asking NERSA to indicate where such further information could be accessed online). No response was received.
22. The opportunity for I&APs to make meaningful representations is further hindered by a lack of any additional underlying information regarding the various determinations made by the Minister (and the fact that the determinations, as discussed in more detail below, do not appear to even include a determination that 2 500MW of new generation capacity from nuclear power is needed).
23. Such information, which should have been but has not been provided, could have at least included:
 - a. any 'road map' developed by the Minister as envisaged by the IRP2019,
 - b. the responses received to the DMRE's June 2020 RFI;

⁹ 40 of 2004.

- c. any documentation considering available technologies;
 - d. any documentation considering the proposed funding models; and
 - e. any affordability assessment (including any financial risk assessment) undertaken.
24. As a consequence it is unclear what information informed the Minister's determination decision to commence the process to procure new nuclear generation capacity of 2 500MW, as well as the determinations decisions relating to various options in respect of the generator¹⁰ and procurer¹¹. No details are provided by NERSA regarding what these various options may entail, and no evaluation of the possible benefits and risks relating to each are provided.
25. Moreover, as noted above, the reasons for the Minister's decision have not been provided.
26. It is submitted that the failure to provide the aforesaid information, and the reasons for the Minister's decision, to stakeholders materially hinders the ability of SAFCEI and ELA-JHB (and other I&APs) to make meaningful representations, and renders the public participation process procedurally unfair and potentially reviewable.
27. In amplification of the above, it has long been recognised that a fair decision-making procedure requires (among other things) that a person 'must be put in possession of such information as will render his [or her] right to make representations a real, and not an illusory one'.¹² Hoexter points out that there is 'a crucial link between the amount and type of information disclosed to an affected person and the quality of his or her opportunity to make representations'.¹³

¹⁰ Item 2 of the Minister's Determination indicates that the Minister has determined that '*[t]he generator of this electricity produced will be either Eskom Holdings (SOC) Limited, or any other organ of state, or in partnership with any other juristic person*'.

¹¹ Item 4 of the Minister's Determination indicates that the Minister has determined that '*[t]he procurer of the nuclear new build programme will be the Department of Mineral Resources and Energy, or any other organ of state, or in partnership with any other juristic person*'.

¹² *Heatherdale Farms v Deputy Minister of Agriculture* 1980 (3) SA 476 (T) (486F-G)

¹³ Hoexter, *Administrative Law in South Africa*, at p371, referring to by the Constitutional Court in *Bengwenyama Minerals v Genorah Resources* 2011 (4) SA 113 (CC) paras 69-74.

28. It is noted that the NERSA Consultation Paper indicates that in addition to achieving the objects in the ERA, NERSA must also satisfy the provisions of PAJA. To this end, NERSA indicates that it is required to undertake a public participation process for the concurrence with the Ministerial determination that enables it to appropriately apply its regulatory views and decision-making prior to concurrence with the Ministerial determination. It is also relevant to note that the NERA stipulates (among other things) that every decision of the Energy Regulator must be taken within a procedurally fair process in which affected persons have the opportunity to submit their views and present relevant facts and evidence to the Energy Regulator.
29. That NERSA's role in making a s34 determination constitutes administrative action as defined in PAJA was confirmed by the judgment handed down on 26 April 2017 by the High Court of South Africa (Western Cape Division) in *Earthlife Africa – Johannesburg & Another v. Minister of Energy & Others*, in which the Justices expressed that view that:
- ...when regard is had to the definition of administrative action in PAJA it is clear that all its elements are satisfied at least as far as NERSA's role in the section 34 determination. NERSA is undoubtedly an organ of State which, in taking the decision to concur with the Minister's proposed determination, was "exercising a public power or performing a public function" in terms of legislation, namely, section 34 of ERA and section 10 of NERA. That decision had a direct, external legal effect and, at the least, adversely affected the rights of energy producers outside.¹⁴
30. Regarding procedurally fair administrative action affecting any person, section 3 of PAJA requires that administrative action which materially and adversely affects the rights or legitimate expectations of any person must be procedurally fair,¹⁵ and stipulates that in order to give effect to the right to procedurally fair administrative action, an administrator must give such a person adequate notice of the nature and purpose of the proposed administrative action, as well as a reasonable opportunity to make representations.¹⁶ The provision of adequate information is a necessary ingredient of fairness. Regarding administrative action affecting the public, the *Regulations on fair*

¹⁴ *Earthlife Africa – Johannesburg & Another v. Minister of Energy & Others* (Case No. 19529/2015), at paragraph 37.

¹⁵ Section 3(1).

¹⁶ Section 3(2)(b)(i) and (ii).

administrative procedures reflect a similar position in relation to public inquiries and notice and comment procedures, namely: that a notice published must contain sufficient information about the matter to be investigated/proposed administrative action to enable the public/members of the public to submit meaningful representations/comments; and when appropriate, must specify a place or places where, and the hours in which, further information about the matter to be investigated/concerning the proposed administrative action will be available for public scrutiny.¹⁷

C. THE MINISTER'S s34 DETERMINATION

31. The limited document set made available to the public for the purposes of this NERSA consultation process includes a s34 determination signed by the Minister.
32. Item 1 of the Minister's determination indicates that the Minister has determined:

To commence the process to procure the new nuclear energy generation capacity of 2 500 MW as per decision 8 of the Integrated Resource Plan for Electricity 2019 – 2030 (published as GN 1360 of 18 October 2019 in *Government Gazette* No. 42784) ("IRP 2019").

33. Curiously, the Minister's determination does not include a determination that new nuclear generation capacity is needed to ensure the continued uninterrupted supply of electricity (as we explain in more detail below). The determination seems to assert that decision 8 of the IRP2019 sanctions the commencement of the process to procure new nuclear energy generation capacity of 2 500MW, alternatively seems to assert that decision 8 sanctions new nuclear energy generation capacity of 2 500MW. As we explain below, the IRP2019 'decision' referred to does not sanction the commencement of a procurement process, but records a policy decision to commence preparations for a new nuclear build programme. Furthermore, the IRP2019 does not make a decision that new nuclear energy generation capacity of 2 500MW is needed, and even if it did such a decision cannot lawfully replace a determination in terms of s34(1) of ERA on the need

¹⁷ GNR1022 of 31 July 2002, r r18(3)(a) and (b).

for new electricity generation capacity from nuclear energy sources.

C1. No determination on need for new nuclear generation capacity

34. The determination signed by the Minister does not contain any determination that new electricity generation capacity is needed and that a percentage of that new capacity is to be generated from nuclear power. Therefore, the determination, which the Minister has asked NERSA to concur in, does not comply with the s34(1) of ERA.¹⁸ This is a significant concern given that our Courts have held that s34(1) of the ERA operates as the legislative framework by which any decision that new electricity generation capacity is required is made.¹⁹ But the proposed s34 determination that has been provided, does not include any such determination. This effectively precludes NERSA from independently applying its mind to this critical preliminary aspect (whether 2 500 MW of new generation capacity from nuclear power is needed), and also precludes the public from making meaningful representations on whether new nuclear generation capacity it needed.
35. In the circumstances, SAFCEI and ELA-JHB's view is that NERSA can only begin a s34 decision and public participation process once it has received a proper proposed determination from the Minister.
36. What the Minister's s34 determination in relation to nuclear power in fact says is merely that a determination is made: *"To commence the process to procure the new nuclear energy generation capacity of 2 500 MW as per decision 8 of the Integrated Resource Plan for Electricity 2019 – 2030"*.

¹⁸ s34(1) of the ERA empowers the Minister (in consultation with the Regulator) to (among other things):

- (a) determine that new generation capacity is needed to ensure the continued uninterrupted supply of electricity;
- (b) determine the types of energy sources from which electricity must be generated, and the percentages of electricity that must be generated from such sources.

¹⁹ The High Court of South Africa (Western Cape Division) explained in *Earthlife Africa – Johannesburg & Another v. Minister of Energy & Others* (Case No. 19529/2015) that section 34(1) of the ERA '...operates as the legislative framework by which any decision that new electricity generation capacity is required', at para 24.

37. But this is not a determination that 2 500 MW of new generation capacity is *needed* and that it should be obtained from nuclear power. These are necessary prior determinations in terms of sections 34(1)(a) and (b). Such determinations are absent from the proposed s34 determination that NERSA has been requested to concur in. The defect in the document provided can be readily appreciated when the wording of item 1 of the s34 determination is compared to the requirements of section 34(1)(a) and (b), and past s34 determinations. These have all expressly determined, as required by s34(1)(a) that new generation capacity is “needed”, and then what portion will be obtained from various energy sources, including nuclear power (as required by s34(1)(b)). There is no such determination in the Minister’s s34 determination that NERSA has been asked to concur in.
 38. NERSA has not provided, or given any indication that the Minister provided, any further documentation or motivation for the “determination” document provided, which would assist in allowing it to be interpreted in any way other than its plain meaning.
 39. Section 34(1)(a) and (b) of the ERA are thus the critical decision points relating to decisions regarding the need for new electricity generation capacity, and the Minister has failed or elected not to exercise this power in making the determination. In the absence of the Minister exercising this power, and NERSA thereafter concurring in the exercise of that power, no lawful determination has been made that 2 500MW of new nuclear electricity generating capacity is needed. Therefore, the basis for making further determinations relating to (among other things) procurement of this new generation capacity is absent. The Minister’s determination decision thus skips this material and significant decision point, and is therefore fatally defective.
- C2. IRP2019 Decision 8 Misinterpreted**
40. In addition, it is submitted that the Minister’s determination misinterprets decision 8 of the IRP2019.
 41. Item 1 of the Minister’s Determination states that the Minister has determined:

To commence the process to procure the new nuclear energy generation capacity of 2 500 MW as per decision 8 of the Integrated Resource Plan for Electricity 2019 – 2030 (published as GN 1360 of 18 October 2019 in *Government Gazette* No. 42784) (“IRP 2019”).

42. In contrast, the wording of IRP 2019 decision 8 is as follows:

Commence preparations for a nuclear new build programme to the extent of 2 500 MW at a pace and scale the country can afford because it is a no-regret option in the long term.²⁰

43. It is evident from the above that the high-level policy ‘decision’ contained in the IRP2019 does not state that a process for the procurement of 2 500 MW of new nuclear energy generation should commence, nor does it allocate 2 500MW of new electricity generation capacity to nuclear. The IRP2019 simply includes a policy decision that preparations for a new nuclear build programme to the extent of 2 500MW should commence, and at a pace and scale that the country can afford. If the Minister was going to base his determination on a consideration of this policy decision, that policy decision required him to first satisfy himself (before making any s34 determination to commence procurement) that procurement of 2 500MW of new nuclear generation capacity was at a pace, scale and cost affordable to the country. As we indicated above, there is no indication that the Minister has provided any information or reasons in this respect to NERSA, and certainly no such information has been provided to SAFCEI and ELA-JHB (and other I&APs).

C3. IRP2019

44. Given the reference in the Minister’s s34 determination to IRP2019 decision 8, these comments turn to discuss the nature of the IRP2019.

²⁰ It is relevant to note that different version of the IRP2019 was initially published in the *Gazette*. Among other things, this version referred to the ‘decisions’ as ‘policy positions’, with policy position 8 reading as follows: **‘Policy Position 8: immediately commence the nuclear build programme to the extent of 2 500MW because it is a no-regret option in the long term and in case the Inga project does not materialise’**. It is understood that this version of the IRP2019 was not approved by Cabinet.

45. As a starting point, it is relevant to note that the term ‘integrated resource plan’ is simply defined in the ERA as meaning ‘a resource plan established by the national sphere of government to give effect to national policy’.²¹
46. Save for providing that NERSA must issue rules designed to implement the integrated resource plan²² and that applications for a license to operate any generation facility must include evidence of compliance with any integrated resource plan applicable at that point in time (or provide reasons for any deviation for approval of the Minister),²³ the ERA does not further regulate or constrain the content of the IRP. The integrated resource plan is also referred to in the Electricity Regulations on New Generation Capacity²⁴ made under the ERA.²⁵ However, it is relevant to note that these Regulations stipulate that while they apply to the procurement of new generation capacity by organs of state, new generation capacity derived from nuclear power is specifically excluded from the application of these Regulations.²⁶
47. In its June 2020 RFI, the DMRE states regarding the IRP2019 as follows:
- In October 2019, the Integrated Resource Plan, which determines South Africa’s energy mix for the 2030 planning horizon, was promulgated. **The policy decision** of the 2019 Integrated Resource Plan stipulates a capacity for nuclear as part of the energy mix, and in particular Decision 8: *“Commence preparations for a nuclear build programme to the extent of 2500 MW at a pace and scale that the country can afford because it is a no-regret option in the long term”*.²⁷
48. While this statement errs insofar as it suggests that the IRP 2019 contains a policy decision that ‘stipulates a capacity for nuclear as part of the energy mix’ (as explained below), it correctly characterizes the IRP2019 ‘decisions’ as policy.
49. The nature of an integrated resource plan is also referred to in the IRP2019 itself, which states as follows:

²¹ Section 1.

²² Section 4(a)(iv).

²³ Section 10(g).

²⁴ GNR.399 of 4 May 2011: Electricity Regulations on New Generation Capacity (as amended).

²⁵ Regulation 4(1).

²⁶ Regulation 2.

²⁷ RFI, at p11, emphasis added.

The IRP is an electricity infrastructure development plan based on least-cost electricity supply and demand balance, taking into account security of supply and the environment (minimize negative emissions and water usage).²⁸

50. Correctly understood, the IRP2019 is non-binding policy, namely an electricity infrastructure plan. The IRP2019 decision 8 thus sets out a policy decision (made by way of a ‘policy adjustment’²⁹ by government and not generated as a ‘least cost’ option by the IRP process) indicating that the DMRE would commence preparations for (not procurement of) a nuclear build programme at a pace and scale that the country can afford.
51. In light of the above, it is submitted that the IRP2019 only commits (on a policy level) to commencing preparations for a nuclear build programme to the extent of 2 500MW at a pace and scale that the country can afford, and does not commit to a new nuclear build programme itself. It is submitted that if it was Cabinet’s intention to provide policy approval for a 2 500MW nuclear new build programme, this would have been clearly stated in the IRP2019. Moreover, an ‘incorrect’ version of the IRP2019 was initially published on 18 October 2019, which included:

Policy Position 8: immediately commence the nuclear build programme to the extent of 2 500MW because it is a no-regret option in the long term and in case the Inga project does not materialize’.³⁰

The replacement of this version of the IRP2019 with the corrected version (which deleted any reference to ‘immediately commence the nuclear build programme’) clearly demonstrates that it was not Cabinet’s intention to approve the commencement of a 2 500MW new nuclear build programme.

52. Furthermore, the IRP2019 recognizes that it is:

²⁸ IRP 2019, p8.

²⁹ See IRP2019, Figure 1 : *IRP Update Review Process*, at page 22.

³⁰ GN 1359 of 18 October 2019: Electricity Regulation (4/2006): Integrated Resource Plan (IRP2019) – October 2019, as published in GG 42778 on 18 October 2019, at p43 (subsequently replaced by GN1360 as published in GG 42784 also on 19 October 2019).

...developed within a context characterized by very fast changes in energy technologies, and uncertainty with regard to the impact of the technological changes on the future energy provision system. As we plan for the next decade, this technological uncertainty is expected to continue and this calls for caution as we make assumptions and commitment for the future in a rapidly changing environment. Accordingly, long-range commitments are to be avoided as much as possible, to eliminate the risk that they might prove costly and ill-advised.³¹ (emphasis added)

The IRP 2019 also recognizes that that some technology options (such as nuclear) ‘will require some level of long-range decisions due to long lead-in times’, and thus ‘[t]he IRP attempt [sic] to harmonize this dichotomy, especially with regard to nuclear, gas and energy storage technologies, which technologies require more consideration of future developments’.³² The IRP2019 goes on to point out with regard to energy security that ‘[g]eneration capacity must accordingly be paced to restore the necessary reserve margin and to be ahead of the economic growth curve at least possible cost’,³³ and that ‘[i]n line with power system requirements, additional capacity from any technology deployed should be done at a scale and pace that flexibly responds to the economy and associated electricity demand, in a manner that avoids tariff shocks in particular; it is the user of electricity that ultimately pays’.³⁴

53. It is evident from that the above that, rather than committing (even on a policy level) to a new nuclear programme post-2030, the IRP2019 takes a far more cautious approach. It recognizes the existence of uncertainty relating to the impact of rapidly evolving technology on the energy system, cautions against making assumptions and commitments for the future in a rapidly changing environment, and indicates that long-range commitments are to be avoided as much as possible to eliminate the risk that they might prove costly and ill-advised. While also recognising that ‘some level of long-range decisions are required’ having regard to technologies with long lead-in times (such as nuclear), the IRP2019 simply indicates (somewhat inelegantly) that such technologies will ‘require more consideration of [sic] future developments’ and that ‘upfront planning is requisite’.³⁵ The IRP2019 reiterates that any additional capacity

³¹ IRP 2019, p10-11.

³² IRP 2019, p11.

³³ IRP 2019, p12.

³⁴ IRP 2019, p12.

³⁵ IRP 2019, p12-13.

should be done at a scale and pace that flexibly responds to the economy and electricity demand, but in a manner that avoids tariff shocks in particular (having regard to the user of electricity who ultimately bears the burden of increased tariff shocks).

54. It is also telling that in response to input received on the draft IRP 2018, the IRP2019 indicates with regard to nuclear that:

Due to the relative marginal costs of generation, in comparison to other technologies, no new capacity comes through before 2030 but there is a scenario that builds new nuclear capacity post 2030. This will be looked at in detail as part of the post 2030 energy mix³⁶ (emphasis added)

55. Referring to the Draft IRP2018, the IRP2019 indicates that it was recommended that ‘the post 2030 path not be confirmed, but that detailed studies be undertaken to inform the future update of the IRP.’³⁷ It is indicated that these studies should (among others) include a:

...detailed analysis of other clean energy supply options (coal, hydro, nuclear and others), including their associated costs and economic benefits... The NDP [National Development Plan] Update further acknowledges the role of nuclear in the energy mix and calls for a thorough investigation of the implications of nuclear energy, including its costs; financing options; institutional arrangements; safety; environmental costs and benefits; localization and employment opportunities; and uranium-enrichment and fuel-fabrication possibilities.

56. It is also relevant to note that the RFI issued by the DMRE revealed that consideration was still being given to nuclear power plant technologies and to financial and technical aspects, while also acknowledging that ‘financing options and related ownership models for such a high capital cost programme is of great importance’.³⁸ The RFI also indicated that ‘*consideration will be given to the complete range of such options for any future South African nuclear build programme*’³⁹:

The Department of Mineral Resources and Energy is issuing this Request for Information (RFI) to the market to make an assessment of Nuclear Power Plant (NPP) technologies which could be considered under the South African Nuclear Power

³⁶ IRP 2019, response to comment 41, at p70.

³⁷ IRP2019, p92.

³⁸ RFI, at p13.

³⁹ RFI, at p13.

Programme... The purpose of this Request for Information (RFI) document is to provide an improved understanding of the experience of different Nuclear Power Plant vendors and obtain information from NPP vendors relating to the financial and technical aspects. These will include costing and financing of respective NPP technologies; plant design features, license ability of plant design in South Africa; feasibility for construction at sites in South Africa; and a detailed project management plan; as well as indicative contracting models (such as Engineering Procurement Contract (EPC), Engineering Procurement Contract Management (EPCM), Build Own and Operate (BOO), Build Own and Transfer (BOT) and Build Own Operate and Transfer (BOOT).⁴⁰ (emphasis added)

57. No information has been made public indicating that the various studies referred to in the IRP2019 have been completed (and if completed no such studies have been made public), while any information obtained by the Minister through the RFI process has also not been made public. Among other things, the question of affordability of a new nuclear build programme thus remains unanswered.
58. Having regard to the fact that the IRP2019 does not include Cabinet approval of a policy decision to commence with a 2 500MW new nuclear build programme, it is submitted that any decision to concur with the Minister's s34 determination by relying on a purported decision committing to a 2 500MW new nuclear build programme would be irregular.

D. RELEVANT CONSIDERATIONS

59. SAFCEI and ELA-JHB sought and obtained input on the proposed new nuclear build programme from nuclear and energy policy expert Professor Steve Thomas, Emeritus Professor of Energy Policy at the University of Greenwich in London (see Annexure A to these comments). These submissions are of a technical nature, supplement SAFCEI and ELA-JHB's representations to NERSA, and are intended to assist NERSA in making its independent decision on whether or not to concur with the Minister's s34 nuclear determination. Prof. Thomas's submissions should be read as if specifically incorporated herein.

⁴⁰ RFI, at p13.

60. While we do not intend to burden these representations by repeating Prof. Thomas's submissions here, we highlight some of the submissions made as relevant considerations that NERSA should take into account in making its decision on concurrence.
61. These relevant considerations can be summarised as follows:
- Large reactor technologies are available, but experience shows that in addition to huge construction costs (as well as costs of finance and decommissioning costs), large nuclear reactor projects typically suffer from significant construction delays and significant costs increases. With some nuclear vendors having suffered financial collapse due to fixed-price deals as a result of huge cost underestimates, South African electricity users and taxpayers are likely to ultimately bear the financial burden and cost escalation risk should new nuclear energy capacity (by far the 'most-cost' new electricity generation capacity option) be procured.
 - There are no small modular reactor (SMR) options currently available that have good prospects of being ready for commercialisation by 2030.
 - South Africa has no realistic prospects of developing a nuclear industry through export sales.
 - Nuclear power is costly to generate due to high construction costs and the cost of financing nuclear builds (which can be as high as the construction costs). Despite the IRP2019 basing its cost assumptions on a 2013 Ingerop report (which is outdated and reliant on data of questionable quality), new nuclear generation capacity has never been part of the 'least cost' solution generated in various versions of the IRP. Unlike renewable energy sources, nuclear costs seem to be rising. Given that recent experience shows that fixed-price deals have resulted in the financial collapse of some nuclear vendors, it is likely that both construction and finance costs (including the risk of probable cost escalations) will be borne by current and future generations of South African electricity consumers and/or taxpayers, regardless of the financing model used.
 - Significant delays in nuclear power station builds impact negatively on electricity capacity planning ('the most unreliable power station is the one that was planned

to operate but has been delayed and is still under construction'), and divert attention away from cheaper options with higher chances of successfully generating power on time. Experience shows that in addition to construction delays, nuclear power typically suffers from significant delays between a government decision to launch new nuclear orders and 'first power'.

- Nuclear proponents often cite the need for base-load capacity to justify building new nuclear plants. Thomas advises that the idea of a need for base-load capacity is based on a misunderstanding, and that what is required is generation resources that are available when needed (i.e. that peaking plants are required regardless of whether nuclear or renewables is pursued, and that in the future peaking requirements will most likely be met by a combination of resources such as batteries, demand-side response and non-fossil fuel fired peaking plants).
- The notion that nuclear complements various renewable power options is wrong. Both nuclear and renewable power sources are inflexible. Nuclear cannot vary its output on an hour-by-hour basis, and suggestions that nuclear can 'load-follow' make no sense from either an economic or technical viewpoint.
- Nuclear power is not carbon neutral. While the routine operation of a nuclear power reactor does not produce CO₂, such emissions occur in the fuel cycle (from the mining of uranium to the disposal of spent nuclear fuel), and also arise from construction inputs (huge amounts of material and labour are required to build a nuclear power facility), as well as from back-up generators, a back-up CHP plant etc. In addition, nuclear power presents other environmental risks, such as the risk of catastrophic incidents, as well as the unanswered question of how to safely dispose of spent nuclear fuel.

62. Having regard to the objects of the ERA,⁴¹ Prof. Thomas states that the submission provides overwhelming evidence that:

- A nuclear programme would not contribute to the effective sustainable and

⁴¹ Section 2.

- orderly development and operation of the South African electricity sector;
- It would raise electricity prices above the level needed to meet electricity demand efficiently;
 - Nuclear power programmes are notoriously difficult to finance and this is generally only possible if the high risks involved fall either on taxpayers or electricity consumers rather than financiers. Proposals to part-finance construction using a consumer levy should not be approved;
 - The nuclear programme would not facilitate universal access;
 - Diversity is not a useful end in itself, it is useful if it improves security of supply and the uncertainties inherent in a nuclear programme would, as demonstrated in the past, reduce supply security;
 - The nuclear programme would lead to prices being higher than they need be so competitiveness would be damaged.
63. Prof. Thomas states that as a result and given that the objects of the ERA are not met, 'NERSA should not concur with the Minister's decision to commence the process to procure the new nuclear energy generation capacity of 2,500MW'.
64. SAFCEI and ELA-JHB agree with and support Prof Thomas's conclusion.

E. ANSWERS TO QUESTIONS CONTAINED IN NERSA CONSULTATION PAPER

65. See Annexure B.

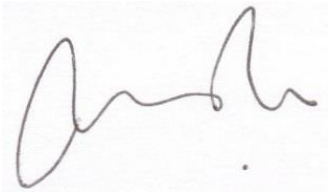
F. ORAL REPRESENTATIONS

66. It is noted that NERSA's *Invitation to Comment* requests stakeholders to indicate if they will be interested in making oral representation to the Regulator in public hearings to be held after the closure of the written comments period.
67. SAFCEI and ELA-JHB confirm that they would like to make oral representations to the Regulator in public hearings to be held after the closure of the written comments period.

G. CONCLUSION

68. For the reasons set out in these comments (read with Annexures A and B), SAFCEI and ELA-JHB submit that NERSA should not concur with the Minister's s34 determination to commence the process to procure the new energy generation capacity of 2 500MW.

Yours sincerely

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

Adrian Leonard Pole