

**IN THE HIGH COURT OF SOUTH AFRICA  
GAUTENG DIVISION, PRETORIA**

**CASE: 56907/2021**

In the matter between:

<b>AFRICAN CLIMATE ALLIANCE</b>	First Applicant
<b>VUKANI ENVIRONMENTAL JUSTICE IN ACTION</b>	Second Applicant
<b>TRUSTEES OF THE GROUNDWORK TRUST</b>	Third Applicant

and

<b>THE MINISTER OF MINERAL RESOURCES AND ENERGY</b>	First Respondent
<b>THE NATIONAL ENERGY REGULATOR OF SOUTH AFRICA</b>	Second Respondent
<b>THE MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT</b>	Third Respondent
<b>THE PRESIDENT OF THE REPUBLIC OF SOUTH AFRICA</b>	Fourth Respondent

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**NERSA'S ANSWERING AFFIDAVIT**

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I, the undersigned,

**NHLANHLA GUMEDE**

make oath and state as follows:

1. I am a major male, and the full-time regulator responsible for electricity regulation at the National Energy Regulator of South Africa ("**NERSA**"), a juristic person established in terms of section 3 of the National Energy Regulator Act 40 of 2004 ("**the NERA**"), the second respondent in this matter. I am authorised to depose to this affidavit on behalf of NERSA.
2. The facts set out in this affidavit draw on the information available to me in my official capacity as stated above. Save where the context indicates to the contrary, or where it is otherwise stated, I have the necessary personal knowledge to depose to the facts concerned. I believe the facts set out to be both true and correct.
3. I make legal submissions on the advice of the second respondent's legal representatives. I accept such advice as correct.
4. I have read the founding affidavit deposed to by **Sarah Robyn Farrell** and filed on behalf of the applicants, as well as the supporting documents attached thereto. I have also read the supplementary affidavit deposed to by **Gabriel Colvin Klaasen**.
5. I deny that any of the allegations contained in the said affidavits are true and correct. Moreover, the applicants' founding papers are replete with allegations

that are not in the deponent's personal knowledge. Much of it is expert evidence which post-dates NERSA's concurrence on 29 July 2020.

6. I do not accept that this information is properly before the Court and reserve the right to submit that such allegations fall to be disregarded to the extent that they relate to information that the applicants did not place before NERSA during the consultation stage, or at any point before NERSA issued the concurrence.

## **[1] INTRODUCTION AND SYNOPSIS**

7. For nearly two decades, South Africa has had significant challenges in electricity supply. The vast majority of the country's population has had to contend with intermittent electricity supply, often times for more than eight hours in a day. This situation has grown significantly worse, with 2023 being the worst year of load shedding so far in the country.
8. Everyone is adversely affected by intermittent electricity supply. However, it is well documented that poor and marginalised people are especially adversely impacted by a lack of electricity supply. For example, jobs have been, and continue to be, lost and further, public institutions like hospitals, clinics, schools, and police stations are unable to properly service the majority of the population. Businesses, in turn, spend significant amounts of money on backup supply. It is not an exaggeration to say that this is a crisis. Simply put, when there is insufficient electricity supply, the country does not function optimally and people's most fundamental rights, especially those of marginalised people, are adversely impacted and often breached.

9. There appears to be little end in sight to resolve this crisis. It is anticipated that South Africa will continue to have a significant electricity generation shortfall over the next five years. This crisis highlights, amongst other factors, the importance of long- and medium-term planning for adequate electricity supply.
10. The legislature has enacted three pieces of legislation that regulate electricity planning:
  - 10.1 The Electricity Regulation Act 4 of 2006 (“**ERA**”);
  - 10.2 The National Energy Regulator Act 40 of 2004 (the “**NERA**”); and
  - 10.3 The National Energy Act 34 of 2008 (the “**Energy Act**”).
11. There are two further pieces of legislation that have a direct impact on planning for new electricity: the National Environmental Management Act 107 of 1998 (the “**NEMA**”) and the National Environment Management: Air Quality Act 39 of 2004 (“**Air Quality Act**”), both enacted to give effect to section 24 of the Constitution.
12. In addition, planning is also guided by certain policy documents which include:
  - (i) the White Paper on the Energy Policy of the Republic of South Africa December 1998;
  - (ii) the National Climate Change Response White Paper;
  - (iii) the nationally determined contribution (NDC) of 2015. I attach these policies as **AA1** and **AA2** and **AA3** respectively.
13. Planning for new generation capacity so that there is sufficient electricity supply is a duty that is vested in the National Executive. This is done through the development of an Integrated Resource Plan (“**IRP**”), the policy document that sets out government’s electricity plans for the country for the medium and long

term. The IRP is a product of extensive public and inter-governmental consultation with different departments and other actors contributing towards its development. Climate change impact is an essential aspect of the development of the IRP, accordingly the IRP must include the carbon constraint to account for the electricity sector's proportional contribution to meeting the country's climate change policy.

14. The extent of NERSA's role in planning under section 34 of the ERA, and the general standard contained in section 10 of the **NERA** must be assessed in light of the IRP process and the legislation that regulates the implementation of new electricity plans. NERSA's process cannot be viewed in isolation of the extensive process in the IRP. Viewed in its proper context, NERSA's duties under section 34 do not include performing the assessments that the applicants contend for.
15. On 18 October 2019, the Minister published the IRP 2019, setting out governments' electricity plans from 2019 to 2030. The IRP addressed the country's medium- and long-term need for new generation capacity, and how much capacity was needed to ensure South Africa's security of electricity supply.
16. The IRP expressly stated that coal would continue to form part of the energy mix in the medium to long term. It provided for the procurement of 1500MW of coal capacity divided into 750MW in 2023 and 750MW in 2027. Before the IRP was published, it went through a rigorous participation and engagement process in which various stakeholders, comprising affected and interested members of the public participated. Many stakeholders provided written objections to the inclusion of coal, because of well-documented climate change and adverse health effects caused by coal-fired power stations. The Minister considered and

addressed these concerns in the IRP by stipulating, amongst others, that High Efficiency Low Emissions technologies (“**HELE technologies**”) would be deployed to reduce greenhouse gas (“**GHG**”) emissions. A HELE coal power plant is still a coal-fired plant – but to generate the same amount of electricity as a traditional plant, a HELE plant would burn less coal, emit less carbon dioxide and release less pollutants, giving it a smaller environmental footprint.

17. On 21 February 2020, in compliance with the provisions of section 34(1) of the ERA, the Minister sent a draft determination to NERSA to consult the latter in its capacity as the Regulator<sup>1</sup>, in relation to what the Minister had determined with respect to new generation capacity. In terms of the draft determination, the Minister determined that the country required a total of 11813MW of new generation capacity to ensure security of supply. According to the Minister, this capacity would be generated from various types of technologies, with the majority being generated from renewable energy and storage (6800MW and 530MW respectively). In addition, 1500MW would be generated from coal.
18. NERSA commenced its process of considering the Minister’s determination by developing a public consultation document, in which it asked members of the public and various stakeholders that represent public interests, to comment on each of the proposed technologies by 7 May 2020. NERSA envisaged that it would conduct in-person consultations in all provinces. However, due to the COVID-19 pandemic and the risks associated with the virus, which are well known and documented, it was not possible to continue with in-person consultations during May 2020. While in-person gatherings were permitted after

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<sup>1</sup> As defined in the ERA.



25 June 2020, the Government restricted numbers to a maximum of 50 persons. NERSA electricity subcommittee thus proceeded with reviewing the comprehensive written comments which it had received from 44 different stakeholders.

19. After completing its review process, on 29 July 2020, NERSA concurred with the Minister's determination regarding the new generation capacity that was needed to ensure the continued uninterrupted supply of electricity that is needed in the country, and the energy sources from which the electricity would be generated. In relation to coal, NERSA agreed with the Minister that 1500MW should be generated from coal for the years 2023 to 2027 to secure the continued uninterrupted generation capacity. It is important to highlight that NERSA specifically set a condition in the concurrence that:<sup>2</sup>

*"In order to mitigate against the negative impact of emissions and to ensure that the country meets its environmental obligations, the coal procured **must utilise High Efficiency, Low Emissions ("HELE") technologies.**" (emphasis added)*

20. In the detailed reasons which NERSA published on 22 September 2020, all the different technologies and electricity sources as determined by the Minister in the draft determination, as well as the various comments and criticisms received by NERSA from various stakeholders were carefully considered and analysed. In regard to coal, NERSA was satisfied that the environmental and health concerns had been adequately addressed by the Department in the IRP.
21. NERSA was satisfied that the IRP was in keeping with the country's National Climate Change Response Policy ("**NCCRP**") adopted in 2011. This policy includes the specification of an emissions range to 2050 called 'Peak, Plateau

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<sup>2</sup> Summary of NERSA's concurrence at para 1.4.1 at CL pg 009-293 – 009-294.

and Decline' (the PPD Range).<sup>3</sup> The PPD Range proposes that South Africa's emissions should be allowed to continue growing to 2025, followed by a Plateau to 2035, before starting to decline in absolute terms. This suggests that a significant reduction in emissions intensity (per unit of GDP) will not be attempted until 2025, from which time GDP growth is considered possible without emissions growth. NERSA took this into account in its reasons for the decision.<sup>4</sup> However, because of the immediate and long-term dangers of continued coal use, NERSA agreed with the Minister with regards to the deployment of HELE technologies to curb greenhouse gas emissions.

22. At the time of the concurrence, NERSA's understanding was that the HELE technologies were, and in some instances had been, tested globally and locally. For instance, locally, Eskom's Majuba UCG pilot plant which operated from January 2007 until September 2011. This plant produced syngas from unmineable coal deposit to supply fuel to the 4,200 MWe Majuba power plant.
23. The tests on the various technologies were collated in a report titled "*Power Generation Technology Data for Integrated Resource Plan of South Africa Technical Update, April 2017*" as part of updating the draft IRP2018. This report was prepared by the Electric Power Research Institute ("EPRI") and is attached to the applicants' founding affidavit as FA 77.<sup>5</sup> NERSA also underscored in its reasons for the decision (RFD) that the future use of coal should go hand in hand with a coal master plan – which would invariably provide further insights on the feasibility of the HELE technologies.

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<sup>3</sup> See Case Lines (CL) at p 004-1110 para 6.4.

<sup>4</sup> NERSA's Reasons for the Decision at CL p 004-869 para 5.4.21. See also IRP at CL p 004-682 para 4.4.

<sup>5</sup> Power Generation Technology Data for Integrated Resource Plan of South Africa at CL p 004-1296.

24. On 25 September 2020, the Minister published his determination which stipulated that new generation capacity needed to be procured to contribute towards energy security and that, amongst others, 1500 MW of this energy should be generated from coal. The IRP requires that new coal must use HELE technologies.<sup>6</sup>

### **[II] A SUMMARY OF NERSA'S DEFENCE**

25. In summary, NERSA's defence are set out below.
26. **First**, NERSA's role is to analyse the Minister's determination, in accordance with its own processes as mandated by applicable legislation, and then to make a recommendation to the Minister. Contrary to the assertions made by the applicant, NERSA is not required to conduct studies for which it is not statutorily mandated to do.
27. **Second**, a broad policy-based climate change impact assessment is done at the IRP stage and a project-specific one is done at the implementation stage before the grant of an environmental authorisation to build a coal-generated plant. This approach is in keeping with the State's obligations in terms of the National Environmental Management Act 107 of 1998 ("**NEMA**"). Regarding the project-specific climate change studies, rather than relying on the Constitution, the applicants ought to have challenged section 24 of NEMA. In terms of section 24 of NEMA, a party seeking to construct a new coal-fired power station requires, amongst other things, an environmental authorisation to be granted by the Chief Director of the DEA. This includes a climate change impact assessment.

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<sup>6</sup> IRP at CL p 004-690 para 5.3.4.

28. **Third**, the absence of feasibility studies on HELE technologies does not render NERSA's concurrence with the Minister's determination unconstitutional or unlawful. NERSA explained in its RFD that: "*the role that coal will be playing in the country as a whole in future must be supported by a coal master plan.*" The coal master plan would "*provide direction on how coal could sustainably be used*".<sup>7</sup> The coal master plan would necessarily require studies on the feasibility of HELE technologies. Moreover, NERSA had regard to the test data in the *Power Generation Technology Data for Integrated Resource Plan of South Africa Technical Update, April 2017* that had been prepared by the EPRI as part of the draft IRP2018 update process. That report highlighted the tests done on HELE technologies locally and abroad, and the costs of the technologies.<sup>8</sup> In addition, the *Regulations: New Generation Capacity, 2011* provides that feasibility studies may still be undertaken or commissioned by the Minister in respect of such new generation requirement. The regulations are attached hereto as Annexure **AA4**.
29. **Fourth**, NERSA is satisfied that the determination is in line with South Africa's CO2 emissions constraints, based on its commitments to reduce emissions in terms of the Paris Agreement.<sup>9</sup>
30. **Fifth**, while NERSA agreed that the new coal envisaged was more expensive than renewable energy, NERSA is satisfied that new coal is still comparable with other technologies like renewable energy plus storage. NERSA also considered the socio-economic benefits of coal.<sup>10</sup>

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<sup>7</sup> NERSA RFD at CL p 004-876 para 5.5.29; p 004-888 para 6.8.

<sup>8</sup> NERSA's response to CER at CL p 920 para 9.3.1.

<sup>9</sup> NERSA RFD at CL p 004-871 para 5.5.11.

<sup>10</sup> NERSA RFD at CL p 004-874 paras 5.5.22 and 5.5.23.

31. **Sixth**, NERSA is satisfied with the modelling because a) the model included constraints to ensure emissions targets are not violated, and b) reputable organisations like the CSIR were used to validate the model.
32. **Seventh**, NERSA had a meaningful consultative process where stakeholders provided their comments in writing. No public hearings could be held due to the restrictions placed on the entire country during the Covid-19 pandemic. Stakeholders were invited to comment, and they did. Their comments were thoroughly considered by NERSA before it concurred with the Minister's determination.
33. In order to understand NERSA's position, it is necessary to assess the electricity planning regime as a whole. It is not appropriate to consider NERSA's concurrence with the Minister's determination in isolation.

### **[III] THE LEGAL FRAMEWORK**

34. Energy planning and new generation capacity for electricity ("**electricity planning**") is a competence of national government through several key pieces of legislation. They are:
  - 34.1 the NERA;
  - 34.2 the ERA;
  - 34.3 the National Energy Act 38 of 2008.

**(a) *The Constitution***

35. The Constitution is the supreme law, and all conduct must be consistent with it. Obligations imposed by the Constitution must be fulfilled. The state must respect, protect, promote and fulfil the rights in the Bill of Rights. Although these rights are subject to the limitations contained in section 36, or elsewhere in the Bill, the limitation has to be reasonable and justifiable. As national regulator, NERSA is bound by these precepts.

36. Whereas there is express provision for socio-economic rights like access to water, food and adequate housing in the Bill of Rights, there is no explicit right to or right of access to electricity. However, the Constitutional Court has held that electricity is an important and indispensable basic municipal service which local government is ordinarily obliged to provide. Electricity is an enabler of rights. It gives effect to the right to life (section 11), the best interests of children (section 28), the right to dignity (section 10), the right of access to healthcare, food and water (section 27), the right to equality (section 9), and the right to a safe and healthy environment (section 24).

37. NERSA is the single regulator to regulate the nation's energy sector, which includes the electricity, piped gas and petroleum pipeline industries. It is the custodian and enforcer of the country's electricity regulatory framework. In other words, NERSA's mandate is to regulate electricity.

**(b) *National Energy Regulator Act 40 of 2004 (the "NERA")***

38. The following provisions of the NERA are relevant:

- 38.1 Section 4(c), stipulates that NERSA must undertake the functions set out in section 4 of the ERA.
- 38.2 Section 9(f), states that members of NERSA must act in the public interest.
- 38.3 Section 10(1)(a) to (f), requires NERSA's decisions to be:
- 38.3.1 consistent with the Constitution and all applicable laws;
  - 38.3.2 in the public interest;
  - 38.3.3 within NERSA's powers as set out in the NERA and the ERA;
  - 38.3.4 taken within a procedurally fair process in which affected persons have an opportunity to submit their views and present facts and evidence to NERSA;
  - 38.3.5 based on reasons, facts and evidence that must be summarised and recorded; and
  - 38.3.6 explained clearly as to its factual and legal basis and the reasons therefor.
39. Section 10(1)(a) to (f) sets the general standard that NERSA's decisions must meet in order to be lawful. NERSA accepts that any recommendation that it makes to the Minister in the process of planning must meet this standard. In meeting this standard, however, NERSA is not required to restart the planning process. NERSA does not need to conduct its own climate change assessment, for instance. It is not required to reinvent the wheel by redoing the Government's

modelling. It must, within the context of the end part of the process of planning, satisfy itself that the steps that the Government has taken allow it to reach a lawful recommendation.

**(c) *The Electricity Regulation Act 4 of 2006 (“the ERA”)***

40. Section 3 of the ERA establishes NERSA as the custodian and enforcer of the national electricity framework provided in terms of the ERA. This is clear from the preamble of the ERA which says that its purpose is:

*“To establish a national regulatory framework for the electricity supply industry; to make the National Energy Regulator of South Africa the custodian and enforcer of the national electricity regulatory framework; to provide for licences and registration as the manner in which generation, transmission, distribution, reticulation, trading and the import and export of electricity are regulated; to regulate the reticulation of electricity by municipalities; and to provide for matters connected therewith.”*

41. The objects of the ERA are set out in section 2. They include to:

41.1 achieve the efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa;

41.2 ensure that the interests and needs of present and future electricity customers and end users are safeguarded and met, having regard to the governance, efficiency, effectiveness and long-term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic;

41.3 facilitate investment in the electricity supply industry;

41.4 facilitate universal access to electricity;



- 41.5 promote the use of diverse energy sources and energy efficiency.
42. The ERA was promulgated to achieve efficient, effective, sustainable and orderly development of electricity generation infrastructure in South Africa. To this end, the ERA requires that new electricity generation be done in an orderly manner. Proper planning is required before any new generation capacity may be added to the grid.
43. Planning for new generation capacity so that there is sufficient electricity supply is a duty that is vested in the National Executive which starts with the starts with the development of the IRP.
44. The following provisions of the ERA are relevant to the development of the IRP.
- 44.1 Section 1 defines an “integrated resource plan (“**IRP**”)” as “a resource plan established by the national sphere of government to give effect to national policy”.
- 44.2 Section 4 requires NERSA to issue rules designed to give effect to the IRP and to implement the national government’s electricity policy framework.
- 44.3 Section 35(4)(j) provides that the Minister may, by notice in the Government Gazette, make regulations regarding new generation capacity.
- 44.3.1 In May 2011, the Minister promulgated the Regulations on New Generation Capacity of 2011 (**the Regulations**).

- 44.3.2 One of the objectives of the Regulations is to facilitate planning for the establishment of new generation capacity.
- 44.3.3 In terms of Regulation 4(1)(a), the Minister must, **after consultation** with NERSA, develop the IRP.
- 44.3.4 Regulation 4(2) provides that the system operator, the national transmission company and NERSA shall timeously provide such assistance as the Minister may require for purposes of developing and monitoring the implementation of an integrated resource plan.
- 44.3.5 Under regulation 4(1)(b) the IRP must be published in the Government Gazette by the Minister.
- 44.3.6 Regulation 5(1) provides that having regard to the need for new generation capacity as provided for in the integrated resource plan, the Minister may undertake or commission the buyer or another party to undertake feasibility studies in respect of such new generation capacity requirement.

45. I make the following observations about these provisions.
46. First, planning for new generation capacity so that there is sufficient electricity supply is a duty that is vested in the National Executive.
47. Second, planning starts with the development of the IRP. This is a policy document which sets out government's electricity plans for the country for the medium and long term. The ERA thus anticipates that national government will

adopt a resource plan which will set out the country's electricity plans in the medium and long term.

48. Third, NERSA must issue rules designed to give effect to the IRP and to implement the national government's electricity policy framework and the Minister must consult NERSA before developing the IRP.
49. Fourth, in terms of the Regulations, the Minister works in collaboration with the system operator, the national transmission company and NERSA for purposes of developing the IRP. In practice, however, many other stakeholders are involved in the development of the IRP.
50. Fifth, in terms of the Regulations, having regard to the need for new generation capacity as provided for in the IRP, the Minister directs that feasibility studies be undertaken in respect of such new generation capacity requirement.
51. In short, the Minister uses the IRP as a pathway to determine what electricity capacity is needed and the energy sources from which the electricity would be generated.
52. After the development and publishing of the IRP, section 34 of the ERA kicks in. Section 34(1) states:

***“34 New generation capacity***

*(1) The Minister may, in consultation with the Regulator-*

- (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;*
- (c) determine that electricity thus produced may only be sold to the persons or in the manner set out in such notice;*
- (d) determine that electricity thus produced must be purchased by the persons set out in such notice;*

- (e) require that new generation capacity must-*
- (i) be established through a tendering procedure which is fair, equitable, transparent, competitive and cost-effective;*
- (ii) provide for private sector participation.”*

53. Section 34(3)(a) provides that NERSA, in issuing a generation licence, is bound by any determination made by the Minister in terms of ss34(1).
54. I make the following observations about these provisions.
55. First, section 34(1) establishes the powers and responsibility of the Minister and NERSA, respectively, to establish new power generation. The Minister has the power and responsibility to make the determination that new generation capacity is needed, and the energy sources and percentages. Before making the determination, the Minister must consult NERSA and NERSA must give its recommendations to the Minister. NERSA may or may not concur in the determination. The Minister is obliged to accept NERSA's recommendations.
56. Second, section 34 does not direct the manner in which NERSA should make its recommendations to the Minister.
57. Third, if NERSA concurs in the Minister's determination, it is bound by the determination and may only issue licences for generation of electricity in accordance with the determination.
58. Fourth, NERSA's recommendation is the penultimate step in the planning process. Once NERSA decides to concur in the decision, the Minister issues a determination. This is the last step in the planning process. Implementation by way of procurement commences thereafter.

59. Overall, the ERA does not provide any details or guidelines about the process that NERSA should follow in making its recommendations to the Minister. The ERA does not direct NERSA to restart the planning process. It recognises NERSA's role as the penultimate step in the planning process.

**(d) *The National Energy Act 38 of 2008 (“the National Energy Act”)***

60. One of the objects of the National Energy Act is to ensure uninterrupted supply of energy to the Republic. It also aims to promote diversity of supply of energy and its resources.

61. The Minister of Minerals and Energy is tasked with ensuring that there is a mechanism in place to collect data and information relating to energy supply, transportation and demand. Each year, the Minister must publish an analysis:

61.1 reviewing energy demand and supply for the previous year;

61.2 forecasting energy supply and demand for no less than 20 years; and

61.3 of plausible energy scenarios of how the future energy demand and supply landscape could look like under different demand and supply assumptions.

62. The Minister is also required to put measures in place to provide for universal access to appropriate forms of energy or energy services for all the people of the Republic, at affordable prices. In doing so, the Minister must take a range of factors into account, such as the safety, health and environmental sustainability of such energy, the availability of energy resources, the optimisation of energy and the need for new infrastructure.

63. The Minister is further obliged, in terms of section 6, to develop, review and publish on an annual basis an Integrated Energy Plan. The Integrated Energy Plan must deal with issues relating to the supply, transformation, transport, storage of and demand for energy in a way that accounts for (a) security of supply; (b) economically available energy resources; (c) affordability; (d) universal accessibility and free basic electricity; (e) social equity; (f) employment; (g) the environment; (h) international commitments; (i) consumer protection; and (j) contribution of energy supply to socio-economic development.
64. The Integrated Energy Plan serves as a guide for energy infrastructure investments, and must take into account all viable energy supply options; and guide the selection of the appropriate technology to meet energy demand.
65. Under section 17 and 18, the Minister may direct that certain steps be taken in order to ensure security of supply of energy.
66. The Energy Act confers the primary authority for energy planning, including electricity planning on the Minister – recognising that energy planning has implications for the country's obligations nationally and internationally.

**(e) *National Environmental Management Act 107 of 1998 (“NEMA”)***

67. The NEMA is South Africa's framework environmental law which provides for cooperative environmental government specifically. The Act was passed to establish a framework regulating the decisions taken by organs of state in respect of activities which may affect the environment.
68. NEMA's overall objective is to realise the constitutional environmental right through intergovernmental cooperation, consultation and support. As I will

explain later, the IRP is an intergovernmental document with inputs from various government institutions and departments including the Department of Environmental Affairs (DoE). The DoE has, in past iterations of the IRP, provided inputs regarding Government-formulated policies to address the country's fair share contributions to the global effort to stabilise GHG concentrations in the atmosphere, i.e. to fight climate change. This macro-level assessment of the climate change impact is in keeping with the NEMA's objective of intergovernmental cooperation, consultation and support.

69. The NEMA also envisages an integrative approach to the protection and management of the environment. Chapter 5 of the NEMA lays down the provisions for integrated environmental management. The objectives of the integrated environmental management include to:

69.1 identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;

69.2 ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;

69.3 ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;

- 69.4 ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and
- 69.5 identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.
70. These objectives are met through various environmental instruments such as, *inter alia*, environmental impact assessments. Section 24(1) of the NEMA requires that the environmental impacts of a listed activity must be considered, investigated, assessed, and reported on to the Chief Director of the Department of Environmental Affairs who is tasked with making a decision on environmental authorisation. The construction and upgrade of a coal-fired power station is a listed activity under the NEMA. This means that an environmental impact assessment must be done before construction of a coal-fired power station.
71. An environmental impact assessment is meant to provide competent authorities with all relevant information on the environmental impacts of the proposed activity. Section 240(1) of the NEMA specifically obliges competent authorities to take account of all relevant factors in deciding on an application for environmental authorisation, including any pollution, environmental impacts, or environmental degradation likely to be caused if an application is approved or refused.
72. The text, purpose, ethos, and intra- and extra-statutory context of section 240(1) of NEMA support the conclusion that an assessment of climate change impacts and mitigating measures will be relevant factors in the environmental authorisation process, and that the consideration of such will best be



accomplished by means of a professionally researched climate change impact report. Moreover, this Court has agreed that specific climate change impact and mitigation strategies of specific coal-fired power stations located at specific sites was a requirement under the NEMA over and above the macro-level assessment of the climate change impact of additional coal-fired power in the IRP process.<sup>11</sup>

73. A climate change impact assessment in relation to the construction of a coal fire power station would ordinarily comprise an assessment of (i) the extent to which a proposed coal-fired power station will contribute to climate change over its lifetime, by quantifying its GHG emissions during construction, operation and decommissioning; (ii) the resilience of the coal-fired power station to climate change, taking into account how climate change will impact on its operation, through factors such as rising temperatures, diminishing water supply, and extreme weather patterns; and (iii) how these impacts may be avoided, mitigated, or remedied.
74. The assessment would be done by an independent environmental assessment practitioner as defined in the NEMA, and any specialists as envisaged in the Environmental Impact Assessment Regulations, 2014.
75. The practitioner and specialists are guided by the Regulations on how to conduct the assessment.

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<sup>11</sup> Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others (65662/16) [2017] ZAGPPHC 58; [2017] 2 All SA 519 (GP).

76. The down-the-line site and project-specific approach envisaged in the NEMA is correct, and the applicants do not challenge the constitutionality of section 24 of the NEMA.
77. In sum, NERSA will contend that the NEMA envisages that a macro-level assessment of the climate change impact of additional coal-fired power is part of the IRP process and that a project specific assessment of climate change impacts and mitigating measures will be relevant factors in the environmental authorisation process down the line, and that consideration of such will best be accomplished by means of a professionally researched climate change impact report.

#### **[IV] INTEGRATED RESOURCE PLANNING AND CLIMATE CHANGE**

78. In this section, I will discuss three topics, namely, (a) the government's climate change policy at the time relevant to this application, (b) what the integrated resource planning approach entails and; (c) that a macro-level assessment of the climate change impact of additional coal-fired power broad policy-based climate change impact assessment is appropriately done at the IRP stage. This is the backdrop against which the extent of NERSA's duties under section 34 of the ERA and section 10 of the NERA must be viewed.

##### ***(a) The government's climate change policy at the relevant time***

79. Climate change refers to the ongoing trend of changes in the earth's general weather conditions as a result of an average rise in the temperature of the earth's surface – often referred to as global warming. This rise in the average global temperature is due primarily to the increased concentration of GHG's in the

atmosphere that are emitted by human activities. GHG's intensify a natural phenomenon called the "greenhouse effect" by forming the insulating layer in the atmosphere that reduces the amount of the sun's heat that radiates back into space and therefore has the effect of making the earth warmer.

80. South Africa is a significant contributor to GHG emissions as a result of the significance of mining and minerals processing in the economy and its coal-intensive energy system. Coal is an emissions-intensive energy carrier and coal-fired power stations emit significant volumes of GHGs, which cause climate change. Coal-fired power stations are the single largest national source of GHG emissions in South Africa. South Africa is therefore particularly vulnerable to the effects of climate change due to its socio-economic and environmental context.
81. The South African Government has formulated policies to address the country's fair share contributions to the global effort to stabilise GHG concentrations in the atmosphere.
82. At the time relevant to this application, namely 2018 to 2020, South Africa's domestic and international climate mitigation policy found expression in:
  - 82.1 the Long-Term Mitigation Scenario ("**LTMS**") process;
  - 82.2 the National Climate Change Response White Paper;
  - 82.3 South Africa's Copenhagen pledge; and
  - 82.4 The nationally determined contribution ("**NDC**") of 2015.
83. These documents set out South Africa's Benchmark National GHG Emissions Trajectory Range (the "Benchmark Trajectory Range"). The Benchmark National

GHG Emissions Trajectory Range reflects South Africa's fair contribution to the global effort to limit climate change to well below a maximum of 2°C above pre-industrial levels. It details the PPD used as the benchmark against which the efficacy of mitigation actions will be measured. This trajectory may be summarised as follows:

83.1 South Africa's GHG emissions will peak in the period 2020 to 2025 in a range with a lower limit of 398 Megatonnes (109 kg) (Mt) CO<sub>2</sub> -eq and upper limits of 583 Mt CO<sub>2</sub> -eq and 614 Mt CO<sub>2</sub> -eq for 2020 and 2025 respectively.

83.2 South Africa's GHG emissions will plateau for up to ten years after the peak within the range with a lower limit of 398 Mt CO<sub>2</sub> -eq and upper limit of 614 Mt CO<sub>2</sub> -eq.

83.3 From 2036 onwards, emissions will decline in absolute terms to a range with a lower limit of 212 Mt CO<sub>2</sub> -eq and upper limit of 428 Mt CO<sub>2</sub> -eq by 2050.

84. This trajectory or the PPD is the benchmark against which the efficacy of mitigation action was measured at the time relevant to this application.

85. I attach (a) the Long-Term Mitigation Scenario (LTMS) process; (b) South Africa's Copenhagen pledge, (c) its nationally determined contribution (NDC) of 2015<sup>12</sup>, and the relevant excerpt of the National Climate Change Response White Paper as annexures **AA5**, **AA6**, **AA3** and **AA2** respectively.

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<sup>12</sup> FA 15 at 004-449.

**(b) An integrated resource planning approach**

86. Section 24 of the Constitution recognises the interrelationship between the environment and development. Planning for new electricity capacity ordinarily results in development. In order to maintain an acceptable balance between the environment and new capacity generation, Government employs the integrated resource planning approach.

87. Integrated resource planning is defined in the White Paper on the Energy Policy of the Republic of South Africa December 1998:

*“IRP is a decision-making process concerned with the acquisition of least-cost energy resources, which takes into account the need to maintain adequate, reliable, safe, and environmentally sound energy services for all customers.”*

88. The IRP approach includes:

88.1 the evaluation of all candidate energy supply and demand resources in an unbiased manner;

88.2 the systematic consideration of a full range of economic, environmental, social, and technological factors;

88.3 the consideration of risks and uncertainties posed by different resource portfolios and external factors, such as fluctuations in fuel prices and economic conditions; and

88.4 the facilitation of public consultation in the utility planning process.

89. This approach is mandated in the ERA. There are several provisions of the ERA that are relevant.

- 89.1 Section 1, which defines the integrated resource plan (“the IRP”) as a resource plan established by the national sphere of government to give effect to national policy.
- 89.2 Section 2, which stipulates that the objects of the Act are to, *inter alia*, achieve the efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa.
- 89.3 Section 4(1)(a)(iv), which directs that NERSA must issue rules designed to implement the IRP.
- 89.4 Section 34(3)(a), which stipulates that NERSA is bound by any determination by the Minister in issuing a generation license.
- 89.5 Section 35(4)(j), (k) and (l), which provide that the Minister may make regulations about new generation capacity, the types of energy sources from which electricity must be generated and the percentages of electricity that must be generated from different energy sources.
90. Planning thus starts with the development of the IRP.
91. As I explained earlier, the duty to develop and update the IRP is vested in the National Executive. At the time relevant to this application, this duty vested in the Minister of Minerals and Energy. This duty is also articulated in the Electricity Regulations on New Generation Capacity, 2011. Regulation 4 thereof stipulates that:

*“(1) The integrated resource plan shall-*  
*(a) be developed by the Minister after consultation with the Regulator;*  
*and*

*(b) be published in the Government Gazette by the Minister.*

*(2) The system operator, the National Transmission Company and the Regulator shall timeously provide such assistance as the Minister may require for purposes of developing and monitoring the implementation of an integrated resource plan.*

*(3) The Regulator shall, after consultation with the Minister, the system operator and the NTC, make rules relating to the keeping of relevant information, the submission of such information and the rendering of returns by licensees, as required in order to facilitate integrated resource planning.”*

92. The Regulation identifies four role players in the development of the IRP, namely: (1) the Minister; (2) the system operator; (3) the National Transmission Company; and (4) NERSA.

93. In practice, however, there are many more role players in the development of the IRP. For instance, National Treasury, the Department of Environmental Affairs, various stakeholders and the public, are also important role players in the development of the IRP.

94. When the IRP 2010 was first developed, the Minister issued the Electricity Regulations on New Generation Capacity, 2009 and directed that the process for developing the IRP2010 shall include:

94.1 Adoption of the planning assumptions;

94.2 Determination of the electricity load forecast;

94.3 Modelling and scenario planning based on the planning assumptions;

94.4 Determination of the base plan derived from a least-cost generation investment requirement;

- 94.5 Risk adjustment of the base plan, which shall be based on: (a) The most probable scenarios; and (b) Government policy objectives for a diverse generation mix, including renewable and alternative energies, demand side management and energy efficiency.
95. Although the 2009 Regulations were replaced by the 2011 Regulations, these elements were in the process of updating the IRP over the years. As a result, any update of the IRP follows these steps.
96. The IRP is developed by first projecting the country's long-term electricity demand, considering the impact of both population growth and economic development, and the role that energy-efficiency and demand-side interventions can play. It then presents a base case and several scenarios which all provide an electricity generation supply mix which can meet future electricity demand at least cost, taking into account the need for ensuring security of supply.
97. Significantly, to explore how the build plan could contribute to a decline in South Africa's GHG emissions in line with the current commitments, modelling of the base case of the IRP includes a carbon constraint to account for the electricity sector's proportional contribution to meeting the country's climate change policy. Climate change impact is thus an essential aspect of the development of the IRP.

**(c) *Addressing climate change in the IRP***

98. Climate change impacts are addressed in the IRP by way of a macro-level assessment of the climate change impact of additional coal-fired power.
99. When the IRP 2010 was developed, which was the first time that planning was done by way of the integrated process, climate change was especially addressed



through inputs received from the Department of Environmental Affairs. In the IRP 2010 Input Parameter Data Sheet, which I attach hereto as **AA7**, the Department explained why Climate Change was added as a parameter:

*“2010 IRP Rev 1: The introduction of restrictions on carbon dioxide emissions in the 2020-2030 timeframe impacted on the choice of technology. The amount of nuclear and renewable (specifically concentrated solar thermal) capacity to be installed had to increase significantly to ensure that the cap on emissions was achieved.*

*2010 IRP Rev 2: The 34% and 42% deviation described above applies to South Africa’s total carbon dioxide emissions. A share of the burden for deviation from business-as-usual must be assumed for the electricity sector and this needs to be factored into the IRP. Much of the deviation in emissions is expected to come from energy efficiency initiatives and this will also impact on the projected demand. A combination of reducing demand and increasing the share of lower-emitting supply options (renewables, nuclear, clean coal and hydro imports) will be a direct impact on Rev 2.”*

100. Regarding the parameter value to be factored into the IRP, the Department explained that:

*“IRP 2010 Rev 1: The LTMS figures showed the country’s CO<sub>2</sub> emissions peaking at 550 Mt CO<sub>2</sub> by 2025. Given that the electricity sector is approximately 50% of South Africa’s emissions, a future limit of 275 Mt was assumed for the electricity sector by 2025. The modelling approach was to place an emission constraint of 275 Mt per year. In the policy adjusted plan for IRP Rev 1 an emissions limit of 310 Mt was achieved.*

*IRP 2010 Rev2: To achieve the 34% and 42% deviations that have been announced, initial indications are that the contribution to this deviation by the electricity sector is between 5%-10% in the 2020 -2025 period. At the same time, energy efficiency is expected to contribute by 8%-9% to the deviation. However, these contributions are assumed from initial presentations made by DEA and the exact figures would have to be verified by them. The trajectory of the total emission production from electricity would still need to allow for a peak prior to 2025 (possibly after*

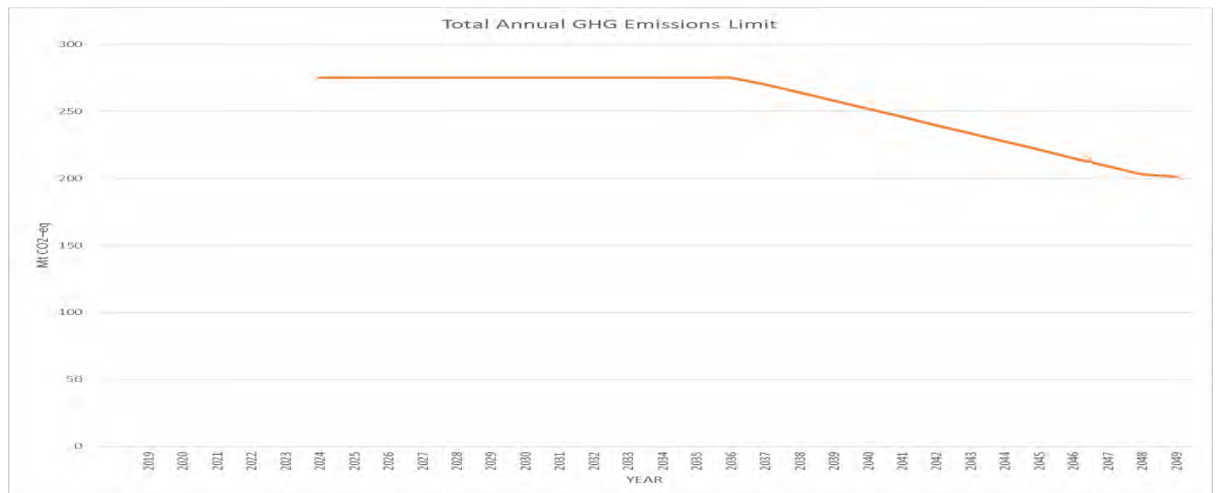
*2020) before the plateau and potential reduction. The 34% reduction target in 2020 does not seem to allow for this which may not be feasible.*

*Rev 1: 275 Mt to 330 Mt in 2025*

*Rev 2 assumed: 5% to 10% reductions in emissions against business-as-usual from electricity generation in the 2020-2025 period but also ensuring lower carbon emitting technologies are included in planning beyond 2025 to start preparing for absolute emissions reductions after 2035.”*

101. The above excerpt represents the different scenarios underscored by the Department for adoption in the final IRP.
102. Ultimately the final iteration of the IRP2010 contained a GHG emissions constraint target limit of 275 million tons per annum until 2030, based on the Benchmark Trajectory Range. It assumed that emissions would peak between 2020 and 2025 as two coal stations, Medupi and Kusile, were brought online, then plateau for approximately a decade and decline in absolute terms thereafter as old coal-fired power plants are decommissioned.
103. The IRP2010 was updated, and the different updated versions published in 2016 and 2018 respectively. These updates led to the adoption of the IRP2019.
104. The IRP2019 extended the period of analysis to look at the period to 2050 while providing a build plan to 2030. By extending the coverage to 2050, the impact of decommissioning Eskom’s coal-fired generation capacity on the long-term requirements for new capacity is clearer. According to the IRP, the decommissioning schedule shows that about 10,599 MW of Eskom’s coal generation capacity will be decommissioned by 2030, with the figure increasing to 35,000 MW by 2050. For reference, the installed capacity in 2018 was 37,149 MW.

105. Like the IRP2010, the IRP2019 is based on the current articulation of the PPD trajectory.<sup>13</sup> This is reflected in the table below which is taken from the IRP2019.<sup>14</sup>



106. This again reflects that South Africa’s emissions are expected to peak, plateau, and from year 2025, decline. A scenario was also tested in the 2019 IRP where the emissions space available to the sector under the PPD (5,470 Mt CO<sub>2</sub>) is divided into three ten-year carbon budgets.

107. The extent of NERSA’s obligations under section 34 of the ERA and the standard set out at section 10 of the NERA must be viewed against this backdrop, namely that:

107.1 South Africa’s Benchmark Trajectory Range details PPD used as the benchmark against which the efficacy of mitigation actions will be measured. This trajectory may be summarised as follows:

<sup>13</sup> IRP2019 p 36 para 4.4.

<sup>14</sup> IRP2019 p 37.

- 107.1.1 South Africa's GHG emissions peak in the period 2020 to 2025 in a range with a lower limit of 398 Megatonnes (109 kg) (Mt) CO<sub>2</sub> -eq and upper limits of 583 Mt CO<sub>2</sub> -eq and 614 Mt CO<sub>2</sub> -eq for 2020 and 2025 respectively.
- 107.1.2 South Africa's GHG emissions will plateau for up to ten years after the peak within the range with a lower limit of 398 Mt CO<sub>2</sub> -eq and upper limit of 614 Mt CO<sub>2</sub> -eq.
- 107.1.3 From 2036 onwards, emissions will decline in absolute terms to a range with a lower limit of 212 Mt CO<sub>2</sub> -eq and upper limit of 428 Mt CO<sub>2</sub> -eq by 2050.
- 107.2 This trajectory or the PPD is the benchmark against which the efficacy of mitigation action was measured at the time relevant to this application. It remains the benchmark to date.
- 107.3 To explore how the build plan could contribute to a decline in South Africa's GHG emissions in line with the above trajectory, modelling of the base case of the IRP included a carbon constraint to account for the electricity sector's proportional contribution to meeting the country's climate change policy. This represents what NERSA refers to as a broad policy-based climate change impact assessment that is done at the IRP stage.
- 107.4 This broad policy-based climate change impact assessment is exactly what the IRP approach requires when it says that a systematic

environmental assessment must be done as part of the integrated resource process.

108. Accordingly, the IRP2019 is based on the current articulation of the PPD trajectory, meaning it reflects South Africa's policy position on how it aims to contribute to mitigate climate change.

**[V] THE IRP2019 IS A PRODUCT OF PUBLIC AND INTER-GOVERNMENTAL CONSULTATION**

109. NERSA's duties under section 34 of the ERA and the standard in section 10 of the NERA must also be viewed against the fact that the IRP is a product of public and inter-governmental consultation.

110. During 2019, the Minister published the Integrated Resource Plan for Electricity 2017-2050. It is the IRP currently in place and represents an update of the IRP2010-2030. It sets out how the DoE plans to meet the country's electricity needs to ensure sufficient generation capacity.

111. The IRP is a product of extensive public and inter-governmental consultation. As its terms explain:

111.1 The IRP update process started with the development and compilation of input assumptions by the DoE.

111.2 Public consultations followed on the assumptions.

- 111.3 Various supply and demand balancing scenarios were modelled, simulated and analysed which culminated in the production of the draft IRP 2018.
- 111.4 In August 2018 and following Cabinet approval, the Draft IRP 2018 report was published for public comment for a period of 60 days.
- 111.5 As with the consultations on the IRP assumptions and the preliminary base case, submissions from the public regarding the draft IRP 2018 varied from opinion statements to substantive inputs with supporting data.
- 111.6 A total of 5 929 submissions were received of which 242 were substantive comments inclusive of discussions and at times supporting facts, data or references. These comments were from a broad range of stakeholders, including civil society and environmentalist organisations.

112. It is explained in the plan that:

“Key issues raised in the comments included among others, the assumptions regarding demand forecast; a substantial number of the comments questioned the projected growth in demand in the context of declining electricity intensity, low economic growth projections and increasing own generation installations made possible by alternative energy technology advancements. Some submissions made the case for a higher demand projection arguing that demand is suppressed by

limited generation capacity and that the availability of excess capacity will unlock investment and therefore lead to electricity demand increase.”

113. The plan further explains that inputs from the public and the consideration of all the comments necessitated the updating of planning assumptions, including updated information from Eskom, Modelling work, simulation and analysis and completion of a further set of test cases on the basis of the updated input data.

114. The IRP was developed after a holistic, careful, and nuanced assessment of various factors including the need to reduce carbon emissions, water availability, energy mix and just transition, risk considerations such as demand forecast and technology costs, coal, research and development, etc.

115. I submit that the considerations underpinning the IRP and the extensive public consultations bears on the extent of NERSA’s duties under section 34 of the ERA and the standard in section 10 of the NERSA Act.

## **[VI] THE FACTUAL BACKGROUND**

116. The Minister published the IRP2019 in October 2019. I do not intend to traverse the IRP2019 in detail, since the applicants have called upon the Minister to defend its legality. For context, however, I make a few observations about the IRP2019.

117. In the introductory section of the IRP, it is explained that it is contemplated in South Africa’s policy plans that the country will have:

*“an energy sector that provides reliable and efficient energy service at competitive rates; that is socially equitable through expanded access to*

*energy at affordable tariffs; and that is environmentally sustainable through reduced emissions and pollution.”*

118. Environmental sustainability is underscored at the outset. It is further explained in the plan that:

*“South Africa is a signatory to the Paris Agreement on Climate Change and has ratified the agreement. In line with INDCs (submitted to the UNFCCC in November 2016), South Africa’s emissions are expected to peak, plateau and from year 2025 decline. The energy sector contributes close to 80% towards the country’s total greenhouse gas emissions of which 50% are from electricity generation and liquid fuel production alone. There is action to reduce emissions with investment already in renewable energy, energy efficiency and public transport.*

*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).*

...

#### **“ENVIRONMENTAL CONSIDERATIONS**

*The energy sector alone, contributes close to 80% towards total emissions of which 50% are from electricity generation and liquid fuel production alone. The timing of the transition to a low carbon economy must be in a manner that is socially just and sensitive to the potential impacts on jobs and local economies. It is in this context that engagements at global forums such as the G20 refer to 'Energy Transitions' and not 'Energy Transition' as a recognition that countries are different and their energy transition paths will also be different due to varying local conditions.*

*Carbon capture and storage, underground coal gasification, and other clean coal technologies are critical considerations that will enable us to continue using our coal resources in an environmentally responsible way into the future.*

*Air quality regulations under the National Environmental Management Act: Air Quality ([Act 39 of 2004](#)) provide that coal power plants under*



*Eskom's fleet, amongst others, have to meet the minimum emission standard (MES) by a certain time, or they would be non-compliant and cannot be legally operated.*

*In addressing the potential non-compliance with the law, a balance will have to be found between energy security, the adverse health impacts of poor air quality and the economic cost associated with these plants shutting down.*

...

#### 4.4 CO<sub>2</sub> EMISSION CONSTRAINTS

*In line with South Africa's commitment to reduce emissions, the promulgated IRP 2010– 2030 imposed CO<sub>2</sub> emission limits on the electricity generation plan. IRP 2010-2030 assumed that emissions would peak between 2020 and 2025 as Medupi and Kusile are brought on line, then plateau for approximately a decade and decline in absolute terms thereafter as old coal-fired power plants are decommissioned.*

*While PPD was applied as the primary assumption, a scenario was tested as part of the draft IRP 2018 where the carbon budget approach was used for emission constraints. A carbon budget is defined as a tolerable quantity of carbon dioxide emissions that can be emitted in total over a specified time. The scenario was based on carbon budget targets divided into 10-year intervals which meant a total emission reduction budget for the entire electricity sector up to 2050 must be 5 470 Mt CO<sub>2</sub> cumulatively”*

119. The context within which the IRP is developed is also set out in the IRP. Significantly, it is acknowledged that the IRP is developed within a context characterised by very fast changes in energy technology and underscores the technological uncertainty that is expected to continue:

##### *“2 The IRP in context*

*This IRP is developed within a context characterised 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.*

*At the same time there is recognition that some of the technology options will require some level of long-range decisions due to long lead times. The IRP attempt to harmonise this dichotomy, especially with regard to nuclear, gas and energy storage technologies, which technologies require more consideration of future developments.*

120. The plan also acknowledges that South Africa continues to pursue a diversified energy mix that reduces reliance on a single or a few primary energy sources. The mix consists of coal, nuclear, natural gas, renewable energy, hydro and energy storage.

*“The South African power system consists of the generation options, which are 38 GW installed capacity from coal, 1.8 GW from nuclear, 2.7 GW from pumped storage, 1.7 GW from hydro, 3.8 GW from diesel and 3.7 GW from renewable energy. The electricity generated is transmitted through a network of high-voltage transmission lines that connect the load centres and Eskom and municipalities distribute the electricity to various end users. Eskom also supply a number of international customers, including electricity utilities, in the SADC region.*

*. . . .*

#### *2.1 THE ENERGY MIX*

*South Africa continues to pursue a diversified energy mix that reduces reliance on a single or a few primary energy sources. The extent of decommissioning of the existing coal fleet due to end of design life, could provide space for a completely different energy mix relative to the current mix. In the period prior to 2030, the system requirements are largely for incremental capacity addition (modular) and flexible technology, to complement the existing installed inflexible capacity.”*

121. For present purposes I focus on coal. The following is said in relation to coal:

*“Coal: Beyond Medupi and Kusile coal will continue to play a significant role in electricity generation in South Africa in the foreseeable future as it is the largest base of the installed generation capacity and it makes up the largest share of energy generated. Due to the design life of the existing coal fleet and the abundance of coal resources, new investments will need to be made in more efficient coal technologies (HELE technology, including supercritical and ultra-supercritical power plants with CCUS ) to comply with climate and environmental requirements. The stance adopted by the Organization for Economic Cooperation and Development and financial institutions in regard to financing coal power plants, is a consideration upon which the support of HELE technology is predicated. This ensures that South African coal still plays an integral part of the energy mix.*

*Given the significant investments required for CCS and CCUS <sup>2</sup> technology, South Africa could benefit from establishing strategic partnerships with international organisations and countries that have made advancements in the development of CCS, CCUS and other HELE technologies.”*

122. The IRP envisaged that any additional coal to the energy mix is subject to the use of HELE technologies.

123. Plant retirement due to end of life was also considered as having an impact on planning:

*“There are a number of Eskom coal plants that will reach end of design life from year 2019. Most of the Eskom plants were designed and constructed for operation for 50 years.*

*In addition, over and above coal plants reaching end of their 50 year design life, the nuclear plant (Koeberg Power Station) reaches its 40 year end of design life in 2024 and plans are already in place to extend its design life and nuclear safety licence for another 20 years.”*

124. Under investments trends in the power sector, the plan explains that:

*“2.8 INVESTMENT TRENDS IN THE POWER SECTOR*

*According to the World Energy Outlook 2018 published by the International Energy Agency (IEA), the electricity sector is experiencing its most dramatic transformation since its creation more than a century ago. Electricity is increasingly the “fuel” of choice and it’s share in global final consumption is approaching 20% and is set to rise further. Investment in renewable energy is continuing to increase as countries transition their power systems to cleaner sources of energy.*

*New investment in fossil fuel (coal) fired power plants is in decline with local and international financial institutions including development financial institutions announcing a stop on financing coal or financing aligned to the OECD position to only finance high efficiency low emissions plants of specific sizes.”*

125. Under “Research and Development”, it is explained that:

*“More funding should be targeted at long-term research into clean coal technologies such as CCUS and UCG as these will be essential in ensuring that South Africa continues to exploit its vast, indigenous minerals responsibly and sustainably.”*

126. The plan also took into account the question of a just transition:

*“5.3.2 Energy Mix and Just Transition*

*Due to the expected decommissioning of approximately 24 100 MW of coal power plants in the period beyond 2030 to 2050, attention must be given to the path adopted to give effect to the energy mix and the preparation work necessary to execute the retirement and replacement of these plants. In order to ensure a socially just transition, the engagement process must commence to put in place the plans and interventions that mitigate against adverse impacts of the plant retirement programme on people and local economies.”*

127. All these considerations (and more) were taken into account in the IRP.

128. Ultimately what emerged as a long-term plan is depicted in the table below.

Table 5: IRP 2019

	Coal	Coal (Decommissioning)	Nuclear	Hydro	Storage	PV	Wind	CSP	Gas & Diesel	Other (Distributed Generation, CogGen, Biomass, Landfill)	
<b>Current Base</b>	37 149		1 860	2 100	2 912	1 474	1 980	300	3 830	499	
2019	2 155	-2 373					244	300		Allocation to the extent of the short term capacity and energy gap.	
2020	1 433	-557				114	300				
2021	1 433	-1 403				300	818				
2022	711	-844			513	400	1 000	1 600			
2023	750	-555				1 000	1 600		500		
2024			1 860				1 600		1 000		500
2025						1 000	1 600				500
2026		-1 219					1 600				500
2027	750	-847					1 600		2 000		500
2028		-475				1 000	1 600				500
2029		-1 694			1 575	1 000	1 600			500	
2030		-1 050		2 500		1 000	1 600			500	
<b>TOTAL INSTALLED CAPACITY by 2030 (MW)</b>		33364	1860	4600	5000	8288	17742	600	6380		
<b>% Total Installed Capacity (% of MW)</b>		43	2.36	5.84	6.35	10.52	22.53	0.76	8.1		
<b>% Annual Energy Contribution (% of MWh)</b>		58.8	4.5	8.4	1.2*	6.3	17.8	0.6	1.3		

Installed Capacity  
 Committed / Already Contracted Capacity  
 Capacity Decommissioned  
 New Additional Capacity  
 Extension of Koeberg Plant Design Life  
 Includes Distributed Generation Capacity for own use

- 2030 Coal Installed Capacity is less capacity decommissioned between years 2020 and 2030
- Koeberg power station rated / installed capacity will revert to 1926 MW (original design capacity) following design life extension work.
- Other / Distributed generation includes all generation facilities in circumstances in which the facility is operated solely to supply electricity to an end-use customer within the same property with the facility
- Short term capacity gap is estimated at 2000 MW

129. The green bars represent new additional capacity planned in the long term as follows:

129.1 1,500MW of new coal-fired power will be procured by 2030. New investments will be directed towards HELE technologies, underground coal gasification and the development of Carbon Capture and Storage.

129.2 1,860MW of nuclear power to be commissioned by 2024, which represents the 20-year extension of the life of the Koeberg nuclear power plant in Cape Town specifically.

129.3 6,000 MW of new solar PV capacity and 14,400 MW of new wind power capacity will be commissioned by 2030.

129.4 2,500MW of hydro-electric power from, the Grand Inga Project in the Democratic Republic of Congo (“**DRC**”), with some of the power intended for transmission to South Africa across DRC, Zambia, Zimbabwe and Botswana, in part in pursuit of regional integration in SADC.

129.5 513MW and 1575MW of storage by 2030.

130. The red bars represent the coal plants that are planned to be decommissioned between 2019 and 2030.

131. On 21 February 2020, NERSA received a letter from the Minister with a draft determination for the procurement of new generation capacity from renewable energy, storage, gas and coal technologies in accordance with section 34(1) of the ERA.

132. The Minister sought NERSA’s recommendation on new generation capacity to contribute towards energy security, and determined that:

*“1.1 6680 megawatts (MW) should be procured to be generated from renewable energy sources (PV and Wind) , which represents the capacity allocated under the headings “PV” and “Wind”, for the years 2022 to 2024, in Table 5 of the Integrated Resource Plan for Electricity 2019-2030 . . . . ;*

*1.2 513 megawatts (MW) should be procured to be generated from storage, which represents the capacity allocated under the heading “Storage” for the year 2022, in Table 5 of the Integrated Resource Plan for Electricity 2019-2030 . . . . ;*

*1.3 3000 megawatts (MW) should be procured to be generated from gas , which represents the capacity allocated under the heading “Gas & Diesel”, for the years 2024 to 2027, in Table 5 of the Integrated Resource Plan for Electricity 2019-2030 . . . . ;*

*1.4 1500 megawatts (MW) should be procured to be generated from coal, which represents the capacity allocated under the heading “Coal” for the years 2023 to 2027 in Table 5 of the Integrated Resource Plan for Electricity 2019-2030 . . . .”*

133. The letter and draft determination form part of the Rule 53 records before this Court.<sup>15</sup>

134. After receiving the draft determination from the Minister, NERSA began its process of considering and reviewing the draft determination.

135. NERSA developed a consultation paper which was published on 18 March 2020, inviting members of the public to comment in writing on the Minister’s draft determination. The purpose of the consultation paper was to elicit views from public in relation to the Minister’s draft determination, so that NERSA could consider these views when making its decision. The deadline for submissions of comments was 7 May 2020.

136. In the consultation paper, NERSA explained to the public that the Minister’s draft determination for added capacity was because it was necessary to close the capacity gap in the medium term so as to minimise the risk of loadshedding and the extensive use of diesel peaking plants.

137. NERSA developed a set of questions in respect of each one of the energy sources that the Minister had determined in the draft determination. In reference to coal, NERSA asked questions and requested pertinent information as follows:

*“i. Will the introduction of coal plants help in ensuring uninterrupted supply of electricity?”*

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<sup>15</sup> CL p 009-280 - 009-286 and p 009-287

*ii. Is this type of technology determined in line with the best practices relevant at the time and ensures the mandate of security of supply as well as the objective of ensuring the use of diverse energy sources and energy efficiency?*

*iii. What should be the allowable coal plant size per IPP?*

*iv. Shouldn't the procurement process of coal power stations be based on turnkey solution?*

*v. Should this type of technology as energy source be dispatchable?*

*vi. Do you think the time allowed for this build allocation will assist in closing the energy gap?*

*vii. Provide what you consider to be the risks or challenges associated with this new capacity.*

*viii. Provide your opinion on the socio-economic aspects of procuring energy from a range of energy source technologies.*

*ix. Provide your thought on the cost that will be associated with the new allocated generation capacity in line with a mandate to ensure long term sustainability of electricity supply industry as well as affordability."*

138. I annex the consultation paper as **AA8**.

139. At the time, it was envisaged that public hearings would be held after written submissions had been received. The indicative timelines for NERSA's process which were included in the consultation paper, appear below:

Activities	No of days
Development of consultation	5
Preparation of Electricity Subcommittee ("ELS") submission	5
ELS Approval of Consultation Paper	20
Publishing the Consultation Paper	30
Analysing written comments	5
<u>Public Hearings</u>	<u>5</u>



Analysing comments including oral submissions	5
Preparation of ELS submissions and Decision and Reasons for Decision (“RFD”)	5
ELS Approval of Concurrence Submission	20
Preparation of Energy Regulator (“ER”) submission and RFD	5
ER Approval Concurrence Submission	15
Total	120 (Approximately 6 Months)

140. It is clear from NERSA’s activities, as outlined above, what its process would have entailed. It was envisaged that after the public hearings, NERSA would collate all comments, written and oral, and take these into consideration when making its decision in relation to the Minister’s draft determination.

141. On 15 March 2020, a state of national disaster was declared in terms of the Disaster Management Act 57 of 2002. As is well documented and common cause, the purpose of the declaration and the subsequently promulgated regulations and directions was to prevent and contain the spread of the SARS-CoV-2 or Coronavirus Disease 2019 (Covid-19) and to regulate the State’s response to the pandemic that had caused widespread health and economic devastation in the country. Subsequently, regulations were promulgated prohibiting gatherings and creating offences for convening a gathering. On 23 March 2020, the President announced that a lockdown of the entire population was to be implemented with effect from 26 March 2020. In order to implement

the lockdown, regulations were introduced which restricted movement of persons during the period 23H59 on Thursday, 26 March 2020, until 23H59 on Thursday, 16 April 2020. The effect of the lockdown regulations was that everyone was confined to their place of residence, except in a very limited set of circumstances where they could go out. Movement between provinces was also prohibited. Save for those providing an essential service or involved in manufacturing and supply, all other business and entities were closed, but could function remotely.

142. Lockdown was extended to 30 April 2020 and in-person gatherings were prohibited up until 25 June 2020, after which the Government restricted numbers to a maximum of 50 persons. NERSA, as a state entity and an employer, observed government's measures to curb the spread of Covid-19. It was therefore not able to host the public hearings during the lockdown period and under alert levels 4 and 3. The relevant lockdown regulations are attached hereto as Annexure **AA9**.

143. It must be emphasised that Covid-19 severely affected the normal functioning of all workers. There was mass hysteria around the impact of COVID19 on everyone's health therefore maximum safeguards were necessary to ensure the safety of all workers. Moreover, NERSA's online systems at the time were not properly established therefore virtual consultations were not a real possibility at that stage. Ultimately, NERSA had to make a value judgement on whether or not to proceed with holding public hearings, and it did the best it could in uncertain circumstances.

144. Having considered and analysed the 44 written submissions, which came from a wide array of interests' groups in response to the consultation paper, NERSA

was satisfied that, in line with its legislative framework, it had facilitated sufficient and meaningful public participation, and further, that it could continue to make its decision on the Minister's draft determination.

145. The ELS prepared an analysis sheet, attached as **AA10**, wherein it summarised the various submissions. The views shared by the public, various interests groups, and stakeholders were, in summary, as follows:

145.1 Most IPPS and environmentalists did not believe that coal would ensure uninterrupted supply, whereas Eskom and City Power did;

145.2 Stakeholders almost unanimously agreed that coal was outmoded and not in line with international best practice;

145.3 Stakeholders identified the risks associated with the use of coal, which includes, long lead times for coal fired plants, funding risks as most financial institutions no longer fund coal plants, litigation, and environmental and health risks;

145.4 Coal might be more expensive than renewable energy because of, *inter alia*, carbon tax, HELE technologies, and adherence to strict emissions standards;

145.5 Environmentalists debunked the notion of "clean coal", explaining that so called clean coal technologies only serve to increase the cost of coal;

145.6 There were different views expressed as to whether coal created more employment than renewable energy, however there was agreement

that environmental and health harms caused by coal outweighed the economic benefits; and

- 145.7 Concerns were raised that with the decommissioning of coal plants on the horizon, there would be shortages of supply.
146. The comments from stakeholders were substantive and covered all the issues that NERSA considered important to allow it to make a decision on the Minister's draft determination. Accordingly, after considering and analysing all the written submissions it solicited and received, NERSA was satisfied that it was authorised, and therefore, acting within its statutory mandate, when it made its decision in concurrence with the Minister.
147. On 7 July 2020, NERSA members and ELS met virtually to consider the submission to approve the RFD for NERSA's recommendation to concur with the Minister's draft determination. ELS recommended to NERSA to concur with the Minister's determination and to approve the RFD.
148. On 29 July 2020, NERSA members and ELS met again to discuss the ELS's recommendations made at the meeting of 7 July 2020. It was resolved at the meeting that NERSA should concur with the Minister's determination. In relation to coal, however, NERSA placed a condition that *"in order to mitigate against the negative impact of emissions and to ensure that the country meets its environmental obligations, the coal procured must utilise High Efficiency, Low Emissions (HELE technologies)."* In addition, the RFD were approved.
149. On the same day, 29 July 2020, NERSA published its concurrence and sent this to the Minister. The concurrence states, in relevant parts thereof, that 1500MW

should be generated from coal and that *“in order to mitigate against the negative impact of emissions and to ensure that the country meets its environmental obligations, the coal procured must utilise High Efficiency, Low Emissions (HELE technologies).”* I attach NERSA’s concurrence as **AA11**.

150. Considering all the abovementioned engagements, it is clear that NERSA did not simply concur that the Minister add coal to secure electricity generation capacity. NERSA went through a rigorous consultation process and further, as an integral part of its decision, specifically added the condition that HELE technologies had to be employed to mitigate environmental harms.

#### **[VII] NERSA’S REASONS FOR THE DECISION**

151. NERSA published the reasons for its decision on 22 September 2020. I annex the reasons as **AA12**.

152. In the reasons, NERSA sets out its mandate under the ERA, including its powers and its obligations under section 34 of the Act. NERSA acknowledged that in performing its mandate, it had to ensure that the objects of section 2 of the ERA are achieved. These objects include the efficient, effective, sustainable and orderly development of electricity supply infrastructure in South Africa.

153. In paragraph 1.7 of the reasons,<sup>16</sup> NERSA acknowledged that in the past, it did not observe the provisions of section 10 of the NERA when considering the

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<sup>16</sup> At p004-839.

Minister's draft determination and that this was held to be unlawful. Pursuant to the Court's determination<sup>17</sup> in this regard:

*"NERSA is now following the legally permissible process, which insulates the decision-making process of the Energy Regulator. This process should be appropriately recognised as the end part of implementing the IRP and not the development, amendment or review of such a policy. Part of the expectation that NERSA should reflect in its consideration of the draft determination is detailed in section 34(1), in terms of economic impact, public interest and striking a fair balance between the interests of customers and end users; and licensees and investors in the electricity supply industry." (own emphasis.)*

154. NERSA explained that the concurrence was aimed at:

*"... ensuring that, at any given time when looking at the short/medium to long term, the supply—demand balance is maintained. The procured capacity must therefore be built on time, thereby promoting the orderly development of the electricity industry, as well as guaranteeing security of supply. Furthermore, NERSA must assess that the capacity to be procured is still appropriate and aligned to both country imperatives and global best practices."*

155. NERSA considered each energy source, and the comments received from the stakeholders. In relation to coal, this is what stakeholders said:

*"5.5. Coal Capacity Analysis*

*5.5.1. The draft determinations determined that 1 500 MW should be generated from coal, which represents the capacity allocated under the heading 'Coal', for the years 2023 to 2027, in Table 5 of the IRP 2019.*

*Coal System Impact*

*Stakeholder Comments*

*5.5.2. Most IPPs and environmentalist stakeholders do not believe that coal would ensure uninterrupted supply. They argue that South Africa is currently encountering load shedding, yet the generation capacity is*

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<sup>17</sup> Earthlife Africa Johannesburg and Another v Minister of Energy and Others (19529/2015) [2017] ZAWCHC 50; [2017] 3 All SA 187 (WCC); 2017 (5) SA 227 (WCC) (26 April 2017).

*dominated by coal. The utilities, Eskom and City Power, however believe that coal will ensure uninterrupted electricity supply.*

*5.5.3. All stakeholders do not believe that new coal capacity will be achieved by 2023 due to the long lead times required for coal plants, as well as funding challenges for new coal-fired power plants. There are also environmental litigations that remain a risk. Difficulties faced by two coal IPPs, Khanyisa and Thabametsi, are often cited as examples. These two IPPs are yet to be licensed by NERSA and have not yet reached financial close due to environmental and financial challenges. Eskom proposes the refurbishment and repurposing of old coal-fired power plants that are due for decommissioning to meet the 750MW coal capacity by 2023.*

*...*

*5.5.6 Stakeholders almost unanimously agree that coal is outdated and not in line with the best practices. Most countries, including South Africa, are committed to Green House Gas emission reduction and are moving away from coal to renewable technologies. Where coal is considered, only high efficiency, low emission (HELE) technologies are considered. These are also sometimes classified as cleaner technologies, although the Centre for Environmental Rights (CER) and other stakeholders highlighted that there is no such thing as clean coal. Stakeholders were further concerned that the determination does not state that the proposed coal technology must be clean. Renewable energy with storage, or gas, is advocated as better solutions.*

*5.5.7 Stakeholders strongly object to any inclusion of coal in the determination. They highlighted that it is in contradiction with the government's carbon emission reduction commitments and not in line with global trends, where governments are moving away from coal. Some stakeholders also pointed out that the Draft Determination does not specify whether only clean technologies would be considered. They further argued that even if clean technologies are considered, they will make electricity more expensive.”*

156. NERSA's analysis of coal starts at paragraph 5.5.4 of the reasons.<sup>18</sup> I set this out below.

*"NERSA Analysis*

*5.5.4. NERSA agrees with Eskom and City Power that new coal would ensure uninterrupted electricity supply, but only if it can be brought online in 2023 as per the IRP 2019. The IPPs and the environmentalists' responses and reasoning that South Africa is experiencing supply constraints despite the fact that generation is dominated by coal is flawed in that it does not consider that the problem is in the management of those power stations, not the technology itself. Some stakeholders' reasons for not believing that coal will provide uninterrupted supply is due to the lead times required from the procurement of coal power plants to the commercial operation date. This will be dealt with in a later section.*

*5.5.5. NERSA agrees with stakeholders that no new coal capacity would close the energy gap by 2024. Coal-fired power plants require long lead times (4 — 9 years) and are prone to environmental litigations. The lack of progress on two power plants, Khanyisa and Thabametsi, that were announced as preferred bidders in October 2016, bears testimony. Sufficient time must therefore be allowed for the establishment of coal capacity.*

*. . .*

*5.5.10. The National Development Plan Vision 2030, as well as the National Climate Change Response White Paper, indicates South Africa's commitments to reducing its carbon footprint. Electricity generation is said to contribute almost 50% of the emissions in the country and South Africa is said to be the world's 14th largest emitter of greenhouse gasses. It has therefore become imperative for the country to move towards reducing its emissions, while ensuring that the socioeconomic impact of this move is minimised.*

*5.5.11 In the IRP model, a CO2 emissions constraint, Peak-Plateau-Decline was placed for the entire horizon of the plan. This is based on South Africa's commitments to reduce emissions in the Paris Agreement.*

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<sup>18</sup> At 004-871.



*This constraint ensured that the energy mix does not exceed the set annual limit. It therefore ensures that emitting technologies are limited and cannot violate the emissions limit (see page 36 and 37 of 98 of the IRP 2019).*

*5.5.12. The costs associated with CO<sub>2</sub> are not included, as the CO<sub>2</sub> emissions constraint imposed already indirectly imposes penalties or additional costs. The extent of the coal contained in the IRP is within the imposed emissions reduction trajectory, which was provided by the DEA and is in line with the country's policy.*

*5.5.13. It is therefore recommended that HELE coal technologies, including underground coal gasification, integrated gasification combined cycle, carbon capture utilisation and storage, and ultra-supercritical, super critical and similar technologies, be deployed for the exploitation of South African coal resources. Decision 6 of the IPR 2019 also confirms that all new coal power projects must be based on HELE technologies and other cleaner coal technologies.*

*5.5.14. In developing any energy plan for any country, several competing factors are considered, and a trade-off is made to determine the best energy mix. NERSA is satisfied that environmental emissions were already considered as stated above. The IRP2019 also considered only clean technologies. It is NERSA's position that any new coal must make use of HELE technologies.”*

157. The key takeaway from this analysis is that:

157.1 NERSA was of the view that new coal would ensure uninterrupted electricity supply if it can be brought online in 2023 as per the IRP 2019.

157.2 NERSA was satisfied that the IRP model was based on the PPD trajectory, which reflects South Africa's commitments to reduce GHG emissions. This constraint ensured that the energy mix does not exceed the set annual limit. It therefore ensures that emitting technologies are limited and cannot violate the emissions limit.

157.3 The extent of the coal contained in the IRP is within the imposed emissions reduction trajectory, which was provided by the DEA and is in line with the country's policy.

157.4 NERSA recommended that HELE coal technology, including underground coal gasification integrated gasification combined cycle, carbon capture utilisation and storage, and ultra super critical, super critical and similar technologies be deployed for the exploitation of South African coal resources.

158. NERSA considered and addressed the risks associated with the use of coal from paragraph 5.6.19 of its reasons.<sup>19</sup> The risks that were identified by stakeholders, as set out in paragraph 145.3 above, were all seriously taken account of by NERSA when it made its decision to concur in the Minister's determination.

159. In response to stakeholder comments on risks associated with the cost of coal technology, NERSA:

*“ . . . agree[d] with the above stakeholder comments. The comments are based on evidence and facts. These are, however, manageable where information symmetry is ensured between the procurer, buyer as well as project developer. Lessons learnt from previous procurement programmes must also be taken into account to ensure they sufficiently militated against.”*

160. In response to costs associated with coal technology, NERSA agreed that carbon tax and stricter emissions legislation will make coal more expensive than the current prices, and this risk must be factored into the decision. This, however,

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<sup>19</sup> At 004-879.

was considered during the development of the IRP2019 (para 4.2 thereof) to determine the optimum energy mix for the country.<sup>20</sup>

161. Regarding the socio-economic impact associated with the technology, NERSA's response to the stakeholder comment was that some socio-economic impact studies consider the full value chain of electricity generation from coal; from coal mining, coal transportation, power generation and associated plant component manufacturing industries. Other studies only consider the number of jobs created in the generation of electricity. If it is considered that most of the renewable energy technologies are constructed outside the country, the number of permanent jobs is higher for coal if the higher value chain is considered (para 5.5.25).

162. NERSA's overall comment on coal was as follows:

*"That it would be problematic to abandon coal for electricity generation due to the mandate to reduce GHG, while still exporting coal to other parts of the world where it is still producing GHG in its processing and/or use.*

*The employment of HELE technologies seems to be a reasonable compromise. Every country uses its resources for the betterment of its economy. Over 98% of Saudi Arabia's electricity generation is from gas, as it has abandoned gas resources.*

*NERSA supports coal procurement in line with the IRP2019 based on its mandate as energy regulator. The role coal will be playing in the country as a whole in future must be supported by a country coal master plan. This will provide direction for the country on how to leverage a resource that is abundantly available in the country, while still ensuring the sustainability thereof.*

*The objection to coal raised by stakeholders are similar to the ones submitted to the DMRE during the public participation process for the*

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<sup>20</sup> Para 5.5.22 -5.5.23 of NERSA's reasons.

*IRP2019. The DMRE responded to each objection (p 61 – 64 of IRP2019).*

*NERSA is satisfied with the DMRE's response. By having less coal, more clean technologies, the balance between achieving security of supply and mitigating the environmental and health effects of coal generation was achieved. Cleaner coal technologies are proposed and government made commitments that environmental legislation would be observed. (para 5.5.27 – 5.5.30).*

163. I attach as **AA13** the DoE's responses to the stakeholder's comments in the IRP which appears at pages 61 to 64 of the IRP.

164. I also attach as **AA14** NERSA's summary of the stakeholder's comments which is annexure B to NERSA's reasons.

165. NERSA's reasons for concurring with the Minister's determination in regard to the use of coal can be summarised as follows.

165.1 Coal should be added to the energy mix subject to the condition that HELE technologies be employed to reduce emissions;

165.2 A CO<sub>2</sub> emissions constraint, which is applicable for the entire period of the plan and cannot be exceeded, was built into the IRP model. The extent of the coal contained in the IRP is within the imposed emissions reduction trajectory. In terms of this plan, South Africa's GHG emissions are expected to increase and peak in the short term, before plateauing and declining over time Accordingly, environmental considerations were properly considered at the IRP stage;

165.3 The planned decommissioning of Eskom's older power stations leaves the transmission system with an inadequate ancillary services reserve

and dispatchability reserves. There is 10500MW of coal generation capacity that is to be decommissioned by 2030 and 35000MW by 2050;

165.4 Although the cost of coal would increase due to the deployment of HELE technologies and carbon tax, the cost was still comparable with other technologies such as renewable energy;

165.5 South Africa has vast coal resources that can still be used to benefit the country, provided that HELE technologies are employed to offset against harmful effects; and

165.6 The IRP2019 (para 2.2.) highlighted the significance of ensuring a “just transition”.<sup>21</sup> Thus the socio-economic impact of decommissioning plants in coal rich communities must be taken into account.

166. Ultimately, NERSA was satisfied that the objections raised by the stakeholders had been satisfactorily addressed by the DoE in the public participation stages of the IRP. In this regard, NERSA carefully considered the DoE’s responses to the stakeholder’s comments in the IRP (which I attached earlier as AA13). It is NERSA’s view that coal should be used but that HELE technologies are to be employed in order to offset emissions.

## **[VIII] NERSA EXPANDS ON ITS REASONS FOR THE DECISION**

167. On 30 October 2020, the applicants’ attorneys of record, the Centre for Environmental Rights, sent a letter to NERSA with several questions concerning NERSA’s Reasons for Decision. NERSA’s response was that its role was not to

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<sup>21</sup> At 004-662.

re-open the development of the IRP. It explained that NERSA was, on invitation by the Department, part of the steering committee during the development of the IRP. NERSA provided comments on the assumptions used, especially on the cost assumptions.

168. In reference to the questions on coal, NERSA's response to the applicants' attorneys can be summarised in the following way:

168.1 First, NERSA explained that it was part of the Steering Committee set up to develop the IRP and was thus privy to the underlying models used in preparing the IRP.

168.2 Second, the scenarios used were based on the country's emissions reduction policy, which looked at the whole country's contributions to GHG and indicated limits for each industry in order to meet the country's goal of GHG emissions reduction.

168.3 Third, it is not NERSA's mandate to assess climate change and health impacts. The emissions constraints scenarios were received from the Department and were in line with the emissions reduction country mandate.

168.4 Fourth, proper regard was given to the environment in the IRP (para 2.2) because the constraints as supplied by the Department were implemented in the model and as a result reduced the number of emitting plants built which is seen by the results of the model and the gazetted energy mix. It is thus understood that the outcome of the model had taken into account the constraints.

168.5 Fifth, NERSA's conclusions were based on the fact that the Eskom coal new builds have made use of these HELE technologies, including the high efficiency boilers and the use of Flue Gas Degasification (FGD) plants, they are therefore feasible and implementable.

168.6 Sixth, the feasibility of HELE technologies has been proven both locally and abroad. For instance, locally, the Kusile power plant uses FDG (which is a HELE technology). NERSA considered the EPRI report, 2017, where the costs and performance of various coal technologies, including FGD, was considered.<sup>22</sup>

169. NERSA also explained that it considered the adverse impacts that coal has on the health and wellbeing of people who live near coal generation plants. It explained that cleaner coal and the decommissioning of plants will result in a net reduction in GHG emissions. Furthermore, during the licencing process, generators need to provide an Environmental Impact Assessment that must ensure compliance with all environmental obligations. The applicant must take their project through a public participation process to ensure that local communities that are directly affected are consulted and have their say before a licence is granted by NERSA.

170. The import of NERSA's response is set out below.

170.1 The concurrence does not contemplate reopening and reconducting the IRP and its processes as would be the case with the Minister.

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<sup>22</sup> Power Generation Technology Data for Integrated Resource Plan of South Africa Technical Update, April 2017 at pp 7-1 to 7-23.

170.2 NERSA participated in the IRP processes and did not conduct its own modelling processes, nor did it conduct any environmental impact assessment.

170.3 The IRP envisaged the use of HELE technology for any added coal. Over and above this, before NERSA issues a licence, an applicant is required to conduct environmental impact assessments, and this process requires public participation.

170.4 NERSA is not required to conduct environmental assessments.

170.5 The HELE technologies have been tested and, in some instances, locally but for the most part, abroad. This is reflected in the Electric Power Research Institute Report 2017 referenced in the IRP (para 4.2).

171. NERSA's response to the applicants' questions is attached as annexure **FA40** to the founding affidavit.

## **[IX] NERSA'S CONCURRENCE IS CONSTITUTIONAL**

172. In what follows, I respond to the claims that NERSA's decision is unconstitutional.

**(a) *NEMA gives effect to the rights that the applicants claim have been breached***

173. The applicants contend that NERSA's concurrence unjustifiably limits the rights contained in section 24 (environmental rights), section 28 (the rights of children), section 11 and 10 (the right to life and human dignity), section 27 (water, healthcare and food), and section 9 (the right to equality). NERSA's primary



contention is that it did not breach the fundamental rights engaged by the applicants when considering climate change and negative health implications of the use of coal.

174. NERSA contends that the principle of subsidiarity prohibits the applicants from directly invoking constitutional rights when legislation has been enacted to give effect to the constitutional rights that form the basis of the applicants' challenge – i.e. environmental rights.

175. In this regard, the main statute which gives effect to the rights relied upon by the applicants is the NEMA. The NEMA bears relevance both in terms of planning and in terms of implementation of new generation capacity.

**(b) NEMA and planning**

176. The NEMA was enacted as a general statute that coordinates environmental functions performed by organs of state. It provides for “*co-operative environmental governance by establishing principles for decision-making on matters affecting the environment*”. The NEMA was passed to establish a framework regulating the decisions taken by organs of state in respect of activities which may affect the environment. It lays down general principles which must be followed in making decisions of that nature. One of the principles in the NEMA recognises that the vital role of women and youth in environmental management and development must be recognised, and that their full participation therein must be promoted.

177. The NEMA envisages an integrative approach to the protection and management of the environment. Section 2(4)(b) of NEMA stipulates that environmental

management must be integrated, acknowledging that all the elements of the environment are linked and interrelated. It must take into account the effects of the decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental options.

178. Assessments on climate change on a broad scale are done in the IRP as part of planning. In the past iterations, this was done by the Department of Environment. In terms of the IRP2019, the Department of Minerals used the PDP trajectory as an emissions standard. That standard had previously been inserted by the Department of Environment.

**(c) NEMA and implementation**

179. Section 24(2)(a) of the NEMA authorises the Minister responsible for the environment to identify activities which may not be commenced with, without environmental authorisation from the competent authority. The development of a new coal-fired power station is a listed activity; as is the development of infrastructure to treat certain quantities of wastewater, commencing with activities which require an atmospheric licence, or developing facilities for the transfer of 50 000 cubic metres of water per day or more.

180. Once an activity has been listed, environmental authorisation to conduct that activity must be obtained from the competent authority, namely, the Chief Director of the Department of Environmental affairs. This is underscored by section 24F(1)(a) of the NEMA, which prohibits the commencement of a listed activity without environmental authorisation. The impacts of listed activities on the environment are assessed in order *'to give effect to the general objectives of integrated environmental management'* in Chapter 5 of NEMA.

181. Chapter 5 of the NEMA lays down the provisions for integrated environmental management. It is important to highlight, fully, what the objectives of integrated environmental management are. The objectives include to:

181.1 identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2;

181.2 ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;

181.3 ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;

181.4 ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and

181.5 identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.

182. These objectives are met through various environmental instruments such as, *inter alia*, environmental impact assessments. In terms of section 24(1) of the NEMA, the environmental impacts of a listed activity must be considered,

investigated, assessed and reported on to the competent authority tasked with making a decision on environmental authorisation. An environmental impact assessment is done to understand the potential environmental impacts of a development, and to inform environmental decision-making before the development of a listed activity like the development of a coal-fired power station is authorised. “Environment” is widely defined in terms of the NEMA to mean the surroundings within which humans exist and includes the land, water and atmosphere of the earth.

183. The information recorded during the environmental impact assessment process provides the basis for a decision to grant (with or without conditions) or refuse authorisation in respect of a given application, and with regard to the authorisation of an application, informs the selection of the most appropriate alternative.

184. The environmental impact assessment is a project-based process that consists of the following distinct phases, namely:

184.1 Screening;

184.2 Scoping;

184.3 Specialist studies;

184.4 Integration and Assessment;

184.5 Public Participation;

184.6 Authority review and decision-making;

184.7 Implementation of the environmental impact assessment Decision; and

184.8 Monitoring

185. I have attached as **AA15** a document issued by the Government of the Western Cape wherein each of these phases is explained in detail.

186. I highlight that the environmental impact assessment is a public process, and public participation is envisaged in the various phases.

187. The purpose of these various phases is to ensure that all the relevant factors are brought to the attention of the authority. This is important since section 240(1) of the NEMA obliges competent authorities to take account of all relevant factors in deciding on an application for environmental authorisation, including any pollution, environmental impacts or environmental degradation likely to be caused if the application is approved or refused.

188. Section 240(1) of the NEMA must be read with the relevant provisions of the Environmental Impact Assessment Regulations, 2010 which sets out what must be contained in an environmental impact assessment report. The following provisions of the Regulations are relevant:

188.1 Regulation 17, which provides that an environmental assessment practitioner must, *inter alia*, be independent and have expertise in conducting environmental impact assessments;

188.2 Regulation 31(2), which provides that the environmental impact assessment report must contain all information that is necessary for the competent authority to consider the application and to reach a decision.

The relevant information includes a description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity and a description of identified potential alternatives to the proposed activity with regard to the activity's advantages and disadvantages;

188.3 Regulation 31(2)(k), which requires the report to also include a description of all environmental issues identified during the assessment process and an indication of the extent to which the issues could be addressed by the adoption of mitigation measures. The report must furthermore address each identified potentially significant impact, including: (i) cumulative impacts; (ii) the nature of the impact; (iii) the extent and duration of the impact; (iv) the probability of the impact occurring; (v) the degree to which the impact can be reversed; (vi) the degree to which the impact may cause irreplaceable loss of resources; and (vii) the degree to which the impact can be mitigated; and

188.4 Regulation 34(2)(b), which obliges the competent authority to reject the environmental impact assessment report if it does not substantially comply with the requirements contained in regulation 31(2).

189. It is now firmly established<sup>23</sup> that climate change impacts of a proposed coal-fired power station are relevant factors which must be considered before environmental authorisation may be granted for the relevant decision-makers to

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<sup>23</sup> Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others (65662/16) [2017] ZAGPPHC 58; [2017] 2 All SA 519 (GP).

determine, firstly, whether the construction of a coal-fired power station should be allowed at all, or, if authorised, the conditions and safeguards that should be imposed to limit and address its climate change impacts. A climate change impact assessment in relation to the construction of a coal fire power station would ordinarily comprise of an assessment of the following:

189.1 One, the extent to which a proposed coal-fired power station will contribute to climate change over its lifetime, by quantifying its GHG emissions during construction, operation and decommissioning;

189.2 Two, the resilience of the coal-fired power station to climate change, taking into account how climate change will impact on its operation, through factors such as rising temperatures, diminishing water supply, and extreme weather patterns; and

189.3 Three, how these impacts may be avoided, mitigated, or remedied.

190. I am further advised that in *Earthlife*<sup>24</sup> the Court have held that the legislative and policy scheme and framework overwhelmingly support the conclusion that an assessment of climate change impacts and mitigating measures will be relevant factors in the environmental authorisation process, and that consideration of such will best be accomplished by means of a professionally researched climate change impact report.

191. Thus:

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<sup>24</sup> *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* (65662/16) [2017] ZAGPPHC 58; [2017] 2 All SA 519 (GP).

191.1 climate change impact assessments are mandated is in terms of NEMA during the implementation stage; and

191.2 the scoping process that precedes an environmental impact assessment provides opportunity for delineating the exercise and guidance on the nature of the climate change impacts that must be assessed and considered.

192. The NEMA gives effect to the rights invoked by the applicants. The applicants must either challenge the constitutionality of NEMA or rely upon NEMA legislation to make their case. They cannot rely directly on the Constitution.

193. In addition, I am advised that the applicants' reliance on the Constitutional provisions is misplaced for the reason that their interpretation of the relevant provisions is incorrect.

**(d) *The correct interpretation of the rights***

194. NERSA's concurrence must be viewed in light of the requirement in section 10 of the NERSA Act, which requires that NERSA's decisions must be constitutional, in the public interest and constitutionally fair. The Court must also have regard to the context within which NERSA's analysis of the Minister's determination and subsequent concurrence is made. The Court must consider this context (which I have explained in detail earlier in this affidavit) in order to assess the scope of the rights claimed by the applicants. The relevant constitutional provisions that the applicants have invoked are these:

194.1 Section 24;



194.2 Section 28(2);

194.3 Section 11;

194.4 Section 9; and

194.5 Section 27(1).

195. In what follows, I set out how these sections should be interpreted, bearing in mind that these provisions have been interpreted by the Courts.

196. NERSA will argue that it was reasonable for it to concur in the Minister's decision. It was reasonable to do so in the context where (a) the relevant policy emissions constraints had been imposed in the IRP and (b) new coal was imposed subject to the use of HELE technologies. These technologies had been and were being tested locally and internationally. Further, there was scope to do a feasibility study at implementation stage, in terms of the 2011 New Capacity Regulations.

197. On the facts, and in context, NERSA will argue that, properly construed, the IRP development process is the appropriate place to set out the rights and interests of children in so far as the environment is concerned. A common-sense approach to planning must be adopted. The IRP development process stage is the time at which the relevant departments consider the various components of the IRP. At the stage of considering the draft determination, NERSA will then seek to satisfy itself as to whether or not the rights and interests of children have been considered.

198. NERSA maintains that it acted within its constitutional and legislative bounds and there was no breach of section 28 of the Constitution.

199. On the present facts in this matter, NERSA was satisfied that children's rights and interests were considered as it adopted the view that the emissions constraints imposed in the IRP and the HELE technologies would be in the best interests of the public, which includes children.
200. NERSA has made its recommendation for new coal subject to the requirement that HELE technologies be employed. This evidences NERSA's guarding against an infringement of these rights.

**(e) *The respective rights on which the applicant mounts its case***

201. In the preceding sections I have traversed (i) NERSA's role under the Constitution and the applicable statutes; (ii) its concurrence; (iii) what it did pre-concurrence.
202. NERSA counters the balance of the case pleaded under breach of constitutionality (Chapter VI – Constitution challenge) by reference to the preceding sections. NERSA denies that its concurrence breaches section 24 (environmental rights). The processes undertaken by the Department pre-NERSA's concurrence, where NERSA contributed information and data to the compilation of the IRP's, considered such rights.
203. On concurrence, NERSA followed the processes consistent with its obligations under the Constitution.
204. The processes followed in the compilation of the IRP and the concurrence, sought to balance on the one hand the rights concerned and, on the other hand, the requirements of the country insofar as energy is concerned. The concurrence does not breach South Africa's commitment under the Paris Agreement, to limit

the temperature increase to 1.5°C and below. The decision to concur is progressive takes cognisance of South Africa's obligations under the Paris Agreement in that:

204.1 the use of coal as an energy source is conditional to the use of clean coal technologies therefore there will be no increase in GHG emissions;

204.2 new, clean coal will be introduced during a transition era whereby a vast majority of the coal fleet will be decommissioned. In making the decision of concurring to 1 500 MW of new coal-fired power, NERSA considered that more than tenfold of that quantum is being decommissioned beyond 2030. It goes without saying that the coal being decommissioned far outweighs the new coal being considered. The emission coming out of the country's coal plants is therefore declining over time and not increasing; and

204.3 the inclusion of 17GW from renewables in the energy mix is another example of a progressive effort to reduce emissions,

205. Importantly, the decision also considers the constitutional rights under section 24.

206. The balance consists of legal argument and submissions will be made at the hearing of the matter.

**(f) *The rights of children***

207. NERSA denies that it failed to give full and proper consideration to the interests of children. NERSA had regard to all 44 comments received from stakeholders

who represent different public interests, including the interests of children. The applicants' attorneys, for instance, represent such interests. In its review of the stakeholder comments, NERSA considered the impact that its concurrence with the Minister's determination would have on present and electricity **future users**, and concluded that the submissions made were comprehensive enough to also cater for the "voice of the children".<sup>25</sup>

**(g) Life and human dignity**

208. Similarly, these rights were considered in the development of the IRP and also thoroughly considered by NERSA when concurring. These factors were placed before NERSA as part of the public participation process. They were taken on board before concurrence.

**(h) Water, healthcare and food**

209. Similarly, these were also taken on board.

**(i) Equality and discrimination**

210. I submit that these considerations were similarly taken on board before concurrence was given.

**(j) Justification under section 36**

211. The executive responsible will obviously justify, but NERSA has already in the preceding sections of the affidavit dealt with the steps taken to ensure that the constitutional rights are observed.

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<sup>25</sup> See for instance the applicants' attorneys submission at 010-285 para 78.

**(k) Under the nature and extent of the limitations**

212. The concurrence with the Minister's determination of 1500 MW of new coal-power does not in any way contravene South Africa's obligation under the Constitution for all the reasons discussed above. Nor does it breach South Africa's commitment to international instruments.

213. NERSA has not shirked its constitutional obligations. NERSA discharged its obligations under the Constitution throughout the concurrence and pre-concurrence milestones. Under the NEMA, licensees must obtain licences and this process entails their submitting of environmental impact assessment reports. The fact that that milestone is yet to be reached does not mean that NERSA has shirked its responsibilities. It is simply a requirement that will be observed and enforced when the milestone is reached. NERSA cannot pre-empt those activities.

214. Every submission of an environmental assessment will have to be assessed on its own merits, including the overall contribution to GHG emissions.

215. The balance of the submissions made by the applicant under the heading "*Nature and extent of the limitation*" constitute legal argument which will be addressed at the hearing of the matter.

216. The question of costs can never supplant proper processes by which decisions are challenged. The applicant must make out a case for challenging the constitutionality of NERSA's concurrence. The fact that there might be disputes and litigation at a later stage cannot justify the initiation of legal proceedings pre-emptively.

**(I) The importance of the purpose of the limitation**

217. We have already discussed the decision and the reasons for concurring with the Minister's determination.

218. We submit that the reasons discussed above as to why coal should be maintained as a source of the electricity satisfy the aspect concerning the importance of the purpose of the limitation. We avoid re-hashing what we have already stated above and ask that it be incorporated by reference.

219. We deny the contents under the topics "*Knowledge to make purpose for the limitation*" and "*less restrictive means*". We address the review in the next section.

**[X] REVIEW APPLICATION**

220. I deny that the applicant has made out a case for review.

221. Insofar as the applicant advances grounds of review against NERSA's concurrence with the Minister's determination, I submit as follows.

222. I have already set out the extent of NERSA's requirement under the concurrence mandate. I stand by what NERSA said in its reasons and in its amplification to CER (annexure **FA40**). NERSA's mandate does not extend to undertaking assessments of climate change. NERSA has regard to what other government departments have placed before the Department and the Ministry.

223. I deny that NERSA said that it had no obligation to consider the climate change or health impacts of new coal-fired power.

- 223.1 NERSA is not required to conduct further independent assessments of climate change.
- 223.2 NERSA was part of the departmental processes.
- 223.3 NERSA contributed to the compilation of the IRP. It considered the finalised IRP and the determination and exercised its independent concurrence.
- 223.4 It is not true that NERSA failed to consider further human health impacts of new coal beyond GHG emissions.
- 223.5 I deny that NERSA abdicated its responsibilities.

**[XI] NERSA'S CONCURRENCE IS LAWFUL, RATIONAL AND REASONABLE**

224. The grounds of review raised by the applicants are unfounded. Their substantive grounds of review are based on an isolated approach to NERSA's concurrence.

**(a) *NERSA was not required to conduct its own climate change impact assessments***

225. First, NERSA's role is not to restart the planning process. NERSA is not mandated to do so. Instead, NERSA's role is to consider and analyse the Minister's determination, in accordance with its own process.

- 225.1 It is not NERSA's place to conduct studies for which it is not mandated and has no expertise in.

225.2 Any interpretation that suggests that NERSA should, at the stage of concurrence, conduct its own studies is at odds with the overall scheme of the statutes that regulate planning.

225.3 NERSA must satisfy itself that the Minister's decision is lawful. If it is so, NERSA will agree. If not, NERSA will not agree to the determination.

226. Second, when the process is viewed in its proper context, it is clear that a specific climate change impact assessment is done at the IRP stage and later at the implementation stage, before granting environmental authorisation to build a coal-generated plant. I have elaborated on this aspect in further detail above.

**(b) *A lack of feasibility studies by NERSA does not render the concurrence unconstitutional or unlawful***

227. The absence of feasibility studies on HELE technologies does not render NERSA's concurrence unconstitutional or unlawful. NERSA explains in its RFD that: *"the role that coal will be playing in the country as a whole in future must be supported by a coal master plan."* The coal master plan would *"provide direction on how coal could sustainably be used"*.<sup>26</sup>

228. Moreover, NERSA had regard to the test data in the *Power Generation Technology Data for Integrated Resource Plan of South Africa Technical Update, April 2017* that had been prepared by the EPRI as part of the draft IRP2018

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<sup>26</sup> NERSA RFD at CL p 876 para 5.5.29; p 888 para 6.8).



update process. That report highlighted the tests done on HELE technologies locally and abroad, and the costs of the technologies.<sup>27</sup>

229. The Kusile Power Station is an example of a local plant that uses HELE/FGD technology hence NERSA was satisfied about the feasibility of implementation of HELE technology locally. NERSA has requested the relevant information regarding the use of HELE technologies from Eskom. Once this is available, NERSA will seek leave to supplement its answer to introduce this information.

230. Lastly, in terms of the *Regulations: New Capacity Generation Capacity, 2011*, feasibility studies may still be undertaken or commissioned by the Minister in respect of such new generation requirement.

**(c) NERSA is satisfied that the emissions constraints were in line with South Africa's Long Term Mitigation Strategy**

231. NERSA is satisfied that the determination is in line with South Africa's CO<sub>2</sub> emissions constraints, based on its commitments to reduce emissions in the Paris Agreement.<sup>28</sup>

232. This is in line with South Africa's Long Term Mitigation Strategy ("LTMS"). As I explained earlier, LTMS process was a Cabinet-mandated government process that occurred in South Africa between 2006 and 2007 and that sought to understand what South Africa could do to mitigate climate change. The LTMS engaged a core group of stakeholders who used technical research and modelling tools to identify a set of GHG emission scenarios and trajectories for

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<sup>27</sup> NERSA's response to CER at CL p 920 para 9.3.1.

<sup>28</sup> NERSA RFD at CL p 871 para 5.5.11.

South Africa between 2010 and 2050. The LTMS confirms that South Africa's GHG emissions must peak between 2020 and 2025, plateau for a decade thereafter, and then decline. The determination was in line with this standard.

**(d) *Least cost***

233. While NERSA agreed that the new coal envisaged was more expensive than renewable energy, it was satisfied that this was still comparable with other technologies like renewable energy plus storage.

234. The cost analysis was based on IRP2019 cost inputs and the EPRI report.. The comparison of technologies was done using the LCOE (R/MWh or R/kWh) tariff in Tables 6 to 9 of the RFD.

235. NERSA also considered the socio-economic benefits of coal.<sup>29</sup>

**(e) *Modelling and no ulterior purpose***

236. NERSA's satisfaction with the modelling was not driven by an ulterior purpose. After comments from the draft IRP2018 were received, the DMRE amended the modelling to include coal-plant assumptions. As part of the IRP 2019 Steering Committee, NERSA understood that constraints were applied in the model to ensure that the plan does not violate the emission targets as provided to the modelling team. The modelling was also validated by organisations like the CSIR.

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<sup>29</sup> NERSA RFD at CL p 874 paras 5.5.22 and 5.5.23.

**(f) Procedural fairness and rationality**

237. I have explained the consultative process that NERSA undertook and that it could not conduct in-person public consultations due to Covid-19. NERSA had a meaningful consultative process where 44 stakeholders provided their comments in writing. Their comments were thoroughly considered and analysed by NERSA, as reflected in the comments summary which forms part of NERSA's record.

238. I am advised that the law gives NERSA a range of options, which include written comments without a hearing. In terms of the NERA, procedural fairness has two parts. The affected persons: must have the opportunity to submit their views; and they must also have the opportunity to present relevant facts and evidence to NERSA. I am advised that due to the fact that NERSA's concurrence constitutes administrative action that affects the public, section 4 of PAJA also bears relevance.

239. Section 4(1) presents the administrator with five **options**. The first is a public inquiry in terms of section 4(2). The second option is to follow a notice and comment procedure in terms of section 4(3). Third is to follow **both** the public inquiry and the notice and comment procedures. Fourth is to follow the process that the administrator has been prescribed by an empowering statute. Fifth is to follow any appropriate procedure which gives effect to the procedural fairness prescripts contained in section 3 of PAJA.

240. It is clear from the provisions of section 4(1) that an administrator is free to choose the procedure that it wants to follow. It is not bound by one procedure. What is important is that stakeholders are given an opportunity to be heard.

241. NERSA decided to do both in person and in writing. However, the public hearings could not be proceeded with due to Covid-19. Section 4(3) of PAJA entitled NERSA to follow a notice and comments procedure in the absence of a public enquiry.

242. Based on the above, NERSA followed a procedurally fair and compliant process.

**(g) *The concurrence was rationally related to the purpose and material before NERSA***

243. The overall purpose of section 34 of the ERA is to enable new generation capacity after a lawful IRP development process. This is done:

243.1 so that efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa can be achieved;

243.2 to ensure that the interests and needs of present and future electricity customers and end users are safeguarded and met, having regard to the governance, efficiency, effectiveness and long-term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic;

243.3 to facilitate investment in the electricity supply industry;

243.4 to facilitate universal access to electricity;

243.5 to promote the use of diverse energy sources and energy efficiency;

243.6 to promote competitiveness and customer and end user choice; and

243.7 to facilitate a fair balance between the interests of customers and end users, licensees, investors in the electricity supply industry, and the public.

244. When it made its decision to concur with the Minister, NERSA had before it, *inter alia*: (a) the IRP; (b) the draft determination; (c) its consultation paper; and (d) comments from the stakeholders.

245. Bearing in mind NERSA's reasons for concurring with the Minister's determination, its decision to concur was rationally related to the purpose of section 34.

**(h) *The concurrence was reasonable***

246. Earlier in this affidavit, I set out NERSA's reasons for its decision. NERSA's decision was reasonable. NERSA's reasons can be summarised as follows.

246.1 First, there is a CO<sub>2</sub> emissions constraints that was built into the IRP model which is applicable for the entire period of the plan and cannot be exceeded. The extent of the coal contained in the IRP is within the imposed emissions reduction trajectory. In terms of this plan, South Africa's GHG emissions are expected to increase and peak in the short term, before plateauing and declining over time.

246.2 Second, environmental emissions were already considered in the IRP and in it a policy decision was taken that all new coal power projects must be based on HELE technologies to reduce emissions. NERSA was satisfied with the consideration of environmental emissions in the IRP.

- 246.3 Third, the planned decommissioning of Eskom's older power stations leaves the transmission system with an inadequate ancillary services reserve and dispatchability reserves. There is 10500MW of coal generation capacity that is to be decommissioned by 2030 and 35000MW by 2050.
- 246.4 Fourth, although the cost of coal would increase due to the deployment of HELE technologies and carbon tax, the cost was still comparable with other technologies.
- 246.5 Fifth, South Africa has vast coal resources that can still be used to benefit the country, provided that HELE technologies are employed to offset against harmful effects.
- 246.6 Sixth, the IRP2019 highlighted the significance of ensuring a "just transition". Thus, the socio-economic impact of decommissioning plants in coal rich communities must be taken into account.

247. NERSA's concurrence with the Minister's determination was reasonable.

## **[XII] SEQUENTIAL RESPONSE TO THE FOUNDING AFFIDAVIT**

248. I now turn to the founding affidavit deposed to by Sarah Robyn Farell on behalf of the applicants and the allegations contained therein. In doing so, I do not repeat what I have stated above. Where I do not respond to a specific paragraph, this should not be construed as an admission. I specifically deny those allegations as if specifically traversed.

249. At the outset, I wish to make it clear that in both their founding and supplementary affidavits, the applicants rely on evidence including expert evidence that came after the concurrence to buttress its case pre-concurrence. This is not appropriate. To the extent that the applicant relies on such evidence, NERSA submits that this should be disregarded as it is irrelevant to NERSA's concurrence.

**Ad paragraphs 1 to 3**

250. Save to deny that all the allegations contained in the founding affidavit are true and correct, the content of these paragraphs is admitted.

**Ad paragraph 4**

251. I note the applicants' description of its application and deny that the plans to procure 1500MW of coal-fired power threaten the rights of present and future generations.

**Ad paragraphs 5 and 6**

252. I admit the allegations contained in these paragraphs.

**Ad paragraph 7**

253. I note the allegations in this paragraph. I must mention that the statement made by the President which the applicants rely on were made after the determination.

**Ad paragraph 8**

254. I admit the allegations in this paragraph. The country is moving away from coal. This is reflected in the IRP: about 5 400 MW of electricity from coal generation

by Eskom will be decommissioned by year 2022, increasing to 10 500 MW by 2030 and 35 000 MW by 2050.<sup>30</sup>

### **Ad paragraphs 9 to 12**

255. I note the allegations in these paragraphs.

### **Ad paragraph 13**

256. I note the allegations in this paragraph and add that the speech was given months after NERSA's concurrence was made. In any event, South Africa is phasing out coal from the electricity sector.

### **Ad paragraph 14**

257. I admit the allegations contained in this paragraph. The applicants are aware that the coal contained in the IRP is within the imposed emissions trajectory, which aims to limit risks to human health.

### **Ad paragraph 15**

258. I deny that the addition of 1500 MW of new coal represents a threat to any of the constitutional rights that the applicants have listed. The coal has been added in order to ensure an uninterrupted supply of electricity, which is necessary for the realisation of the very rights that the applicants claim are breached. I reiterate that the coal in the IRP is within the imposed emissions trajectory, which aims to limit risks to human health.

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<sup>30</sup> At 004-681.



## **Ad paragraph 16**

259. I admit that, in general, climate change disproportionately affects the poor, and that children are more vulnerable to the effects of pollution and climate change. However, for the reasons stated earlier in this affidavit, I deny that the addition of 1500 MW new coal is a violation of constitutional rights.

## **Ad paragraph 17 and subparagraph**

260. I admit that South Africa has the opportunity to move away from its reliance on polluting fossil fuels, it has already started to do so. I also admit that the price of renewable energy has dropped over the years.

261. I deny the remainder of the allegations contained in this paragraph. In its RFD, NERSA explained that intermittency is one of the risks associated with renewable energy, which is why renewable energy and storage go hand in hand. At the time of the concurrence, few matured and commercially available energy storage technologies had reached commerciality. A number of energy storage technologies have still not been commercialised and are being tested for operational flexibility and grid compliance. This shows that energy storage is still a work in progress. In the interest of a secure supply, it was not feasible to rely primarily on renewable energy at that stage.<sup>31</sup>

262. While the prices that the applicants have relied upon in respect of new solar and wind, vis-à-vis coal are correct (solar and wind are cheaper than coal), this is only half the picture. The complete picture necessarily includes the price of

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<sup>31</sup> At 004-850 – 004-863.

storage. Renewable energy needs storage, and the price of storage needs to be factored in.

**Ad paragraph 18**

263. I admit that the most recent modelling shows that the addition of new coal projected at between R23 billion and R109 billion in comparison to an optimal least cost electricity system for the country. It is an oversimplification to say that renewable energy is an economic imperative, so this is denied. Storage is a big part of renewable energy, and until more options become available, it will not be possible to say how much more effective renewable energy cost is than coal.

**Ad paragraph 19**

264. I refer to the Minister's response from paragraphs 110 to 119 of his answering affidavit.<sup>32</sup>

**Ad paragraph 20**

265. I deny the allegations contained in this paragraph. NERSA is not responsible for economic modelling in the IRP.

**Ad paragraph 21**

266. The allegations in this paragraph are denied. I have set out above in detail the reasons why the decision to add new coal is both reasonable and justifiable.

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<sup>32</sup> From 019-38.

**Ad paragraph 22**

267. I admit that the applicants' attorneys corresponded with NERSA, requesting it to reconsider. I deny that these efforts have "largely" been ignored. NERSA did respond.

**Ad paragraph 23**

268. Save to state that the applicants are not entitled to the orders that they seek, the allegations contained in this paragraph are admitted.

**Ad paragraph 24**

269. Save to state that both the constitutional challenge and the review application are unmeritorious, the allegations contained in this paragraph are admitted.

**Ad paragraphs 25 and 26**

270. I note the allegations in these paragraphs.

**Ad paragraphs 27 and 28**

271. I note the allegations in these paragraphs. The expert reports contain anecdotal evidence related to the causes and effects of climate change and why cleaner coal technology cannot be attained. The latter speaks to the feasibility of HELE technologies which, in terms of the New Capacity Regulations, may still be undertaken.<sup>33</sup>

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<sup>33</sup> Regulation 5 of the Electricity Regulations on New Generation Capacity published on 4 May 2011, attached hereto as AA4.

## **Ad paragraph 29**

272. I note that the applicants intend to and rely on the reports and studies that it has highlighted and attached to its affidavit. I specifically deny that the applicants are entitled to rely on these reports and studies for purposes of the review application. I also deny that it is in the interest of justice that these be admitted into evidence.

272.1 The applicants' attorney was part of NERSA's concurrence process. To the extent that these reports and studies were available at that time, it was incumbent on the applicants' attorneys to place these before NERSA at that stage. NERSA would then have had the opportunity to apply its mind to these reports and studies.

272.2 The failure by the applicants to place these before NERSA and attempt to put them before this Court in what is also a review application is impermissible. It is not in the interests of justice for a Court, considering a review, to consider material that did not form part of the decision maker's record.

272.3 To the extent that this Court is minded to admit this evidence in so far as the constitutional challenge is concerned, this Court may consider which of these reports are relevant to that enquiry, and admit only that which is relevant.

## **Ad paragraphs 30 and 31**

273. I deny the allegations contained in this paragraph. A finding by this Court that the addition of new coal violates the rights complained of, or/and a review of the

concurrence would mean that the determination would need to be reconsidered, so that uninterrupted supply of electricity is maintained. This will necessarily impact upon the remaining portions of the concurrence, including renewable energy.

274. Legal argument will be submitted in this regard.

**Ad paragraph 32 and subparagraphs**

275. Save to deny that the applicants are entitled to the relief sought, I note the remainder of the allegations in this paragraph.

**Ad paragraphs 33 to 39**

276. I admit these allegations.

**Ad paragraph 40 and subparagraphs**

277. I note these allegations.

**Ad paragraph 41**

278. Save to deny that NERSA's concurrence amounts to a breach of constitutional rights, I note the remainder of the allegations contained in this paragraph.

**Ad paragraphs 42 and 43**

279. The implications of sections 7(2) and 24 of the Constitution are matters for argument and will be addressed as such.

**Ad paragraph 44**

280. I admit the allegations contained in this paragraph. The commitment that South Africa has made in relation to these international agreements, including the Paris Agreement, is that South Africa's emissions expect to peak, plateau and from year 2025 decline.

**Ad paragraphs 45 and 46**

281. The implications of these provisions of the Constitution are matters for argument and will be addressed as such.

**Ad paragraphs 47 to 54**

282. Save to deny any suggestion that new coal that is within the imposed emissions reduction trajectory is a regression, the remainder of the allegations contained in these paragraphs are admitted in so far as they accord with the documents attached, some of which post-date NERSA's concurrence.

**Ad paragraphs 55 to 64**

283. I admit the allegations contained in these paragraphs in so far as they reflect the provisions in the statutes.

284. In relation to the IRP, NERSA contends that the publication is preceded by a public and nuanced development process. I stress that the extent of NERSA's responsibility under section 34 of the ERA must be construed in light of the entire IRP process and the down-the-line processes as well.

**Ad paragraph 65**

285. Save to deny any suggestion that NERSA deferred considerations of constitutional rights and environmental harms, the remainder of the allegations in this paragraph are admitted.

**Ad paragraphs 66 and 67**

286. I admit the allegations contained in these paragraphs.

**Ad paragraphs 68 and 69**

287. I admit the allegations contained in these paragraphs.

**Ad paragraph 70**

288. In the Minister's answering affidavit (from para 79),<sup>34</sup> the various updates to the IRP are explained. I refer to the Minister's recordal of these updates. I admit that the IRP was updated during these years.

**Ad paragraph 71**

289. I have no knowledge of the allegations contained in this paragraph.

**Ad paragraphs 72 and 83**

290. I defer to the Minister's response in paragraphs 70 to 119 of his answering affidavit.

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<sup>34</sup> At 019-26.

**Ad paragraphs 73 to 76**

291. NERSA defers to the Minister as the allegations contained in these paragraphs are directed at the Minister.

**Ad paragraphs 77 to 82**

292. I admit the allegations contained in these paragraphs.

**Ad paragraphs 84 to 89**

293. NERSA defers to the Minister as the allegations contained in these paragraphs are directed at the Minister.

**Ad paragraphs 90 to 92**

294. I admit the allegations that the correspondence was exchanged. NERSA disputed that it needed to provide reasons because in its view, it was not the concurrent decision maker in respect of the IRP.

**Ad paragraph 93**

295. Save to deny that NERSA's refusal was unjustified and unlawful, I admit the allegations contained in this paragraph.

**Ad paragraphs 94 and 95**

296. I note these allegations.

**Ad paragraph 96 and 97**

297. I admit these allegations.



**Ad paragraph 98**

298. I note the allegations contained in this paragraph, which are directed at the Minister.

**Ad paragraph 99**

299. Save to note that NERSA has no knowledge that the draft determination was not made public before, I admit the allegations contained in this paragraph.

**Ad paragraph 100**

300. I have no knowledge of the allegations contained in this paragraph, which are directed at the Minister.

**Ad paragraphs 101 and 103**

301. I admit the allegations contained in these paragraphs. I have addressed the reasons why NERSA could not hold public consultations above. NERSA addressed the stakeholder's objections – I have dealt with this above.

**Ad paragraphs 104 and 105**

302. I admit these allegations.

**Ad paragraphs 106 and 107**

303. Save to state that the reasons for the concurrence are legitimate, I admit the remainder of the allegations in these paragraphs.

**Ad paragraphs 108 to 111**

304. I note these allegations which are directed at the Minister.

**Ad paragraph 112 to 114**

305. I admit these allegations.

**Ad paragraphs 115 to 117**

306. I admit these allegations. I add that:

306.1 The applicants have correctly alleged, that they wanted the Minister's response to their demand, not NERSA's.

306.2 In any event, once the determination had been issued, it constituted administrative action which could only be revisited upon review. The applicants' attorneys were well aware of this.

306.3 I also note that the applicants tried to draw the Minister's attention to new reports and studies after the concurrence had been issued.

**Ad paragraph 118**

307. I note the allegations contained in this paragraph, which are directed at the Minister.

**Ad paragraphs 119 to 146**

308. I admit the allegations contained in these paragraphs. While NERSA acknowledges that extremities of the worst-case scenarios that climate change may present, this needs to be balanced with South Africa's duty under the PPD trajectory, the South African government's duty to ensure that there is an adequate and uninterrupted supply of electricity and the introduction of clean coal as an attempt by the government to address climate change.

**Ad paragraph 145 and 146**

309. I admit the contents of these paragraphs to the extent that they are consistent with the documents relied on.

**Ad paragraph 147 to 157**

310. I defer to the Minister's answering affidavit at paragraphs 269 onwards.<sup>35</sup>

**Ad paragraph 158 to 230**

311. I have addressed South Africa's position in relation to climate change, and the measures taken to maintain the minimum emission contribution.

312. I dispute that the addition of 1500MW of coal will significantly worsen the situation.

**Ad paragraphs 231 to 243**

313. I deny the allegations contained in these paragraphs and align myself with the Minister's position as articulated in paras 287 to 302 of his answering affidavit. Moreover, NERSA submits that the feasibility of coal is a question that comes in at procurement, in terms of the New Capacity generation regulations.

**Ad paragraphs 244 to 284**

314. The contents of the allegations contained in these paragraphs are based on speculation, without any due regard to the feasibility of HELE technologies.

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<sup>35</sup> From 019-75-019-78.

Accordingly, they are denied. Further any attempts by the applicants to rely on post concurrence data ought to be dismissed.

315. Legal arguments will be submitted in this regard.

**Ad paragraphs 285 to 307**

316. I note the allegations contained in these paragraphs.

**Ad paragraphs 308 to 322**

317. I note the allegations contained in these paragraphs and the supporting affidavits.

**Ad paragraphs 323 to 327**

318. I admit that the Minister's section 34 determination and NERSA's concurrence constitute administrative action. I defer the remainder of the allegations regarding the IRP to the Minister.

**Ad paragraph 328**

319. I note the allegations contained in this paragraph.

**Ad paragraphs 329 and 330**

320. I deny that the procurement of new coal violates section 24 of the Constitution.

321. The interpretation of section 24 is a matter for legal argument. Nevertheless, I am advised that the applicants' classification of section 24(a) as an unqualified right is incorrect. Section 24(a) is qualified in two ways:

321.1 First, the right to a healthy environment is framed negatively – it is a right to an environment that is not harmful, as opposed to a positive right to a healthy environment. This means that it enshrines a certain minimum standard and does not grant a positive right of indeterminate extent. This explains why we have legislation like the Air Quality Act, which is aimed at protecting the environment by providing reasonable measures for the protection and enhancement of the quality of air in the Republic.

321.2 Second, section 36 of the Constitution qualifies certain rights in the Bill of Rights. Section 24 is one such right.

322. I admit the remainder of the allegations contained in these paragraphs to the extent that they reflect section 24.

**Ad paragraph 331**

323. I admit that the State, by virtue of section 7(2) and 24 of the Constitution, bears an obligation to give effect to section 24, including the negative obligations to desist from harming the environment. However, as I explained above, there is a certain minimum standard that is envisaged by the framing of the right in the negative.

324. In section 24(b), the state has positive obligations to protect the environment for the benefit of present and future generations.

325. I deny the remainder of the allegations in this paragraph.

**Ad paragraph 332**

326. I have already explained the limitations to section 24(a) above. I accordingly deny the allegations contained in this paragraph. I specifically deny that the negative obligations imposed on the state are not subject to any assessment of reasonableness or that a limitation of section 24(a) may never be justifiable. Which is essentially what the applicants would have this Court find.

**Ad paragraph 333 and 334**

327. I deny the allegations contained in these paragraphs. I have set out in detail above why new coal does not limit section 24(a). I have shown that the government is doing its part to limit global temperature increases in accordance with the Paris Agreement.

**Ad paragraph 335**

328. The duty to protect the people from South Africa from the impacts of climate change includes introducing clean coal, with minimal impact on persons and the environment, while decarbonising. Accordingly, I deny the allegations contained in this paragraph.

**Ad paragraph 336**

329. I deny the constitutional duty as described, and that the addition of new coal is inconsistent with the country's fair share obligations.

**Ad paragraph 337**

330. I deny the allegations in this paragraph. It is pure speculation with no basis at all.

**Ad paragraph 338**

331. I deny that the addition of coal limits section 24(b).

**Ad paragraph 339 and subparagraphs**

332. I deny the allegations contained in these paragraphs.

**Ad paragraphs 340 and 341**

333. Save to deny that new coal will have adverse effects, I admit the allegations contained in these paragraphs.

**Ad paragraph 342**

334. I deny these allegations.

**Ad paragraph 343**

335. I admit the contents of this paragraph.

**Ad paragraph 344**

336. While I admit that NERSA's concurrence is silent on children's rights, I deny that NERSA failed to have proper regard to the interests of children. I specifically deny the suggestion that children will be adversely affected by the concurrence.

**Ad paragraphs 345 and 346**

337. I deny the allegations in these paragraphs. NERSA invited public comments before the concurrence. The applicants' attorneys gave their comments then. They were well able to produce these affidavits at that stage.

**Ad paragraphs 347 to 351**

338. Save to admit the allegations concerning the content of the right to life, the remainder of the allegations in these paragraphs are denied.

**Ad paragraph 352 to 355**

339. I deny the allegations contained in these paragraphs. The state is obliged to take reasonable legislative and other measures, progressively, to realise the achievement of the rights contained in section 27.

**Ad paragraph 356 to 360**

340. It is so that climate change disproportionality affects poor, black South Africans, and particularly women and children, but I deny that this means that new coal unfairly discriminates on the basis of age as against young people and the elderly.

**Ad paragraph 361**

341. I deny the allegations contained in these paragraphs.

**Ad paragraphs 362 to 366.4 and subparagraphs**

342. I deny the allegations contained in these paragraphs. The feasibility of HELE technologies is to be determined at the stage of procurement.

**Ad paragraph 366.5 and subparagraphs**

343. The requirements for environmental impact assessments are dealt with in terms of NEMA. If the applicants are unhappy about the stage at which these happen, they must lobby parliament to amend the NEMA.



**Ad paragraphs 367 to 382**

344. I deny the contents of these paragraphs for the reasons stated above.

345. Legal argument will be presented on these allegations.

**Ad paragraph 383 and subparagraphs**

346. I note the contents of these paragraphs, which are directed at the Minister.

**Ad paragraphs 385 to 391**

347. I deny the contents of these paragraphs. I have dealt with the need for energy security above.

**Ad paragraphs 392 to 403**

348. I deny the allegations contained in these paragraphs. In NERSA's reasons it is explained that both technologies have a positive socio-economic impact that they bring into the electricity industry, and the socio-economic targets set by the procurer should reflect this (para 5.5.26 of the reasons).<sup>36</sup>

**Ad paragraph 404 and subparagraphs**

349. I deny the allegations contained in these paragraphs. I have dealt with HELE technologies and clean coal above. The decommissioning, together with the clean coal, justifies the addition.

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<sup>36</sup> At 004-877.

**Ad paragraphs 405 to 409**

350. The use of coal is conditional on the employment of HELE technologies. NERSA advocates for the responsible use of coal – because it is an energy source that is available. Accordingly, the allegations in these paragraphs are denied.

**Ad paragraphs 410 and 411**

351. I deny the allegations contained in these paragraphs. No new coal and more renewable energy is not a less restrictive means. I have dealt with the uncertainties around the storage of renewable energy above. Energy security is important.

**Ad paragraphs 412 to 414**

352. I note the contents of these paragraphs.

**Ad paragraphs 415 and 416**

353. I deny the contents of these paragraphs insofar as they relate to NERSA's concurrence.

**Ad paragraphs 417 to 424**

354. I note the contents of these paragraphs, which are directed at the Minister.

**Ad paragraphs 425 to 431 and subparagraphs**

355. Elsewhere in this affidavit I addressed how this Court should interpret the extent of NERSA's obligations under section 34 of the ERA and the standard set in section 10 of the NERA. I stand by those submissions and accordingly deny the

allegations in these paragraphs insofar as they propose an isolated interpretation of the said provisions.

**Ad paragraphs 432 to 435**

356. Save to note the remedy that the applicants have sought, the remainder of the allegations are denied. The prejudice is manifest, namely, that there will be another lag in securing electricity in the medium and long term – resulting in more loadshedding. The adverse effects of loadshedding have been sufficiently determined by this Honourable Court.

**Ad paragraphs 436 to 450**

357. NERSA does not oppose the condonation application.

**Ad paragraph 451**

358. NERSA asks for the dismissal of the application, with costs, including the costs of two counsel.

**[XIII] SEQUENTIAL RESPONSE TO THE SUPPLEMENTARY AFFIDAVIT**

359. I do not traverse matters that I have already covered in the preceding sections. I only address new allegations that come out of the supplementary affidavit.

360. I only reference paragraphs that I intend responding to. Where I do not respond, that should not be construed as an admission. I specifically deny those allegations as if specifically traversed.

**Ad paragraphs 1 to 5**

361. Save to deny that the contents of these paragraphs are true and correct, I note the remainder of these paragraphs.

**Ad paragraphs 6 to 13.4**

362. The allegations contained in these paragraphs are noted.

**Ad paragraphs 14 to 31**

363. I note the allegations contained in these paragraphs, which are directed at the Minister.

**Ad paragraphs 32 to 39**

364. Save to deny that the record served by NERSA was incomplete, I admit the remainder of the allegations in these paragraphs.

**Ad paragraph 40**

365. The applicants refer to “audit report” which NERSA relied on under item 9.1.2 of its reasons, in which it claimed that the DMRE “engaged an independent consultant to audit the IRP 2019 model”.

366. For the sake of completeness,, in response to 9.1.2, NERSA said the following:

*“NERSA provided comments and inputs to the Model. DMRE engaged an independent consultant to audit the IRP 2019 Model. Mr was also part of the steering committee set up for the development of the IRP and therefore was privy to the details of the Model.”*

367. NERSA’s explanation is as follows:

- 367.1 Firstly, it must be noted that the Minister was not bound by NERSA's views on modelling.
- 367.2 Secondly, the recommendation for an independent consultant to consider the draft IRP was not motivated by the identification of any issues with the modelling, but by the belief that it would be best to have the views of an external, independent party with no vested interest in the outcome of the IRP. This recommendation was meant to serve as a guide to the DMRE for future iterations of the IRP, noting the work already done by the team. It was not an obstacle which stood in NERSA's way or could invalidate its concurrence with the Minister's determination.
- 367.3 Thirdly, the recommendation of an independent consultant to audit the IRP2019 was discussed in the meetings of the Steering Committee, which were conducted by the DMRE. As such, the audit report and any reference thereto should be in transcripts from the Steering Committee's meetings, which should be in the DMRE's records. NERSA is therefore not in possession of these records.

**Ad paragraphs 41 to 43**

368. NERSA denies that its record is incomplete. The remainder of the allegations are admitted.

**Ad paragraphs 44 to 49**

369. I note the contents of these paragraphs.

**Ad paragraphs 50 to 89**

370. The applicants reference reports and documents that come after NERSA's concurrence. These reports and documents are dated 2022 and 2023. They are irrelevant to NERSA's concurrence which was finalised and published in July 2020. As I explained earlier in this affidavit, at the time relevant to this application, namely 2018 to 2020, South Africa's domestic and international climate mitigation policy found expression in:

370.1 The Long-Term Mitigation Scenario (LTMS) process;

370.2 The National Climate Change Response White Paper;

370.3 South Africa's Copenhagen pledge; and

370.4 The nationally determined contribution (NDC) of 2015.

371. These documents set out South Africa's Benchmark National GHG Emissions Trajectory Range (the "Benchmark Trajectory Range"). The Benchmark National GHG Emissions Trajectory Range reflects South Africa's fair contribution to the global effort to limit climate change to well below a maximum of 2°C above pre-industrial levels. It details the "peak, plateau and decline trajectory" (hereinafter "**PPD**") used as the benchmark against which the efficacy of mitigation actions will be measured. This trajectory may be summarised as follows:

371.1 South Africa's GHG emissions peak in the period 2020 to 2025 in a range with a lower limit of 398 Megatonnes (109 kg) (Mt) CO<sub>2</sub> -eq and upper limits of 583 Mt CO<sub>2</sub> -eq and 614 Mt CO<sub>2</sub> -eq for 2020 and 2025 respectively.

371.2 South Africa's GHG emissions will plateau for up to ten years after the peak within the range with a lower limit of 398 Mt CO<sub>2</sub> -eq and upper limit of 614 Mt CO<sub>2</sub> -eq.

371.3 From 2036 onwards, emissions will decline in absolute terms to a range with a lower limit of 212 Mt CO<sub>2</sub> -eq and upper limit of 428 Mt CO<sub>2</sub> -eq by 2050.

372. This trajectory or the PPD is the benchmark against which the efficacy of mitigation action was measured at the time relevant to this application. It remains the benchmark to date.

373. It is important to distinguish the informational value of these post-dated reports as opposed to something that should be pleaded in circumstances where the target of the applicants' attack is, at least in the case of NERSA, NERSA's concurrence of July 2020. Thus, the reliance on these reports must be cautious in the sense that NERSA did not have access to these reports at the time. The concurrence has already taken place and NERSA cannot go back to the decision.

**(a) As regards to the supplemented grounds of review**

**Ad paragraphs 107 to 119 and subparagraphs**

374. NERSA maintains its stance that it considered the written comments from stakeholders who also represent the rights and interests of children and future generations and accordingly deny these allegations. In this regard, NERSA cites the applicants' attorneys as an example. It is because NERSA considered section 24 of the Constitution, which guarantees and protects the rights of present and future generations, that it concurred with the Minister's draft determination, on condition that HELE technologies should be employed.

**Ad paragraphs 120 to 126**

375. NERSA maintains its stance that it is speculative to say that HELE technologies are not feasible, bearing in mind that the New Capacity regulations allow for feasibility studies at implementation. Accordingly, NERSA denies the allegations contained in these paragraphs.

**Ad paragraphs 127 to 158**

376. The allegations contained in these paragraphs are directed at the Minister.

**Ad paragraphs 159 to 165**

377. The extent of NERSA's satisfaction with the modelling has already been dealt with above.



378. At paragraph 72 onward of the Minister’s answering affidavit,<sup>37</sup> it is explained how the modelling works. Essentially, information is fed into a mathematical simulation model that mimics the country’s electricity power system which then processes the information and produces results based on various scenarios being tested. These results are used to decide the generation mix taking into account energy security, cost and environmental impact.

**Ad paragraphs 166 to 169**

379. As explained earlier in this affidavit, the feasibility of clean coal is a question for implementation. Further, based on the EPRI 2017 report, NERSA was satisfied that the technologies were in process and in some instances had been tested. NERSA was not required to conduct its own feasibility studies. NERSA was also satisfied that Eskom had itself tested some of the technologies at its Amajuba plant. Ultimately, NERSA believed that the use of clean coal would go hand in hand with further studies in feasibility. NERSA accordingly denies the allegations contained in these paragraphs.

**Ad paragraphs 170 to 178**

380. NERSA does not oppose the condonation application.

**Ad paragraphs 179 to 182**

381. The allegations contained in this paragraph are denied. NERSA reiterates that the country is moving towards decarbonisation. Insofar as the applicants allege that the concurrence is based on an IRP that is contrary to the “least cost”

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<sup>37</sup> At 019-24– 019-26.

requirement, this is denied. As NERSA explained in its reasons, the costs of the HELE technologies were assumed in the IRP. These costs are comparable with the rest of the technologies in the energy mix.<sup>38</sup>

## **[XIV] CONCLUSION**

382. Wherefore the second respondent prays that the application be dismissed with costs, including the costs of two counsel.

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DEPONENT

I hereby certify that the deponent knows and understands the contents of this affidavit and that it is to the best of the deponent's knowledge both true and correct. This affidavit was signed and sworn to before me at \_\_\_\_\_ on this the \_\_\_\_ day of \_\_\_\_\_ 2024, and that the Regulations contained in Government Notice R.1258 of 21 July 1972, as amended by R1648 of 19 August 1977, and as further amended by R1428 of 11 July 1989, having been complied with.

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**COMMISSIONER OF OATHS**

Full names:

Address:

Capacity:

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<sup>38</sup> At 004-875 para 5.5.23.