NATIONAL ENERGY REGULATOR OF SOUTH AFRICA

CONSULTATION PAPER

CONCURRENCE WITH THE MINISTERIAL DETERMINATION ON THE PROCUREMENT OF NEW GENERATION CAPACITY OF 14 791 MW FROM RENEWABLES (SOLAR PV, WIND) AND STORAGE TECHNOLOGIES

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EXECUTIVE SUMMARY

The National Energy Regulator (NERSA) is a regulatory authority established as a juristic person in Terms of Section 3 of the National Energy Regulator Act, 2004 (Act No. 40 of 2004). NERSA's mandate includes regulation of the Electricity Supply Industry. In accordance with section 34 of the Electricity Regulation Act, 2006 (Act No. 4 of 2006) ('the Act'), the Minister of Mineral Resources and Energy ("the Minister") may, in consultation with the Energy Regulator, determine that new generation capacity is needed to ensure the continued uninterrupted supply of electricity.

In implementing the gazetted IRP 2019, the Minister in this determination is proposing to procure 14 791 megawatts (MW) new capacity to be generated from renewable energy sources (Photovoltaic (PV) and Wind) and storage, which represents the capacity allocated under the headings "PV", "Wind" and "Storage" for the years 2024 to 2030, as gazetted on the Integrated Resource Plan for Electricity 2019 – 2030 (published as GN 1360 of 18 October 2019 in Government Gazette No. 42784 ("IRP 2019").

The new generation capacity of 14 791 MW proposed is broken down according to the following MW allocations:

1) **3 960MW** is proposed to be generated from PV, which represents the capacity allocated under the heading "PV", for the years 2024 to 2030, in Table 5 of the IRP 2019;
2) **9 600MW** is proposed by the minister to be generated from Wind, which represents the capacity allocated under the heading "Wind", for the years 2024 to 2027, in Table 5 of the IRP 2019; and
3) **1 231MW** is proposed by the Minister to be generated from storage, which represents the capacity allocated under the heading "Storage", for the years 2024 to 2030, in Table 5 of the IRP 2019.

In satisfying the concurrence process according to Section 34 of the Act, the Energy Regulator is requesting stakeholders to comment on the new generation capacity proposed by the minister.

Written comments should be sent to NERSA for the attention of **Mr Mondli Shozi** at:

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The deadline for the submission of comments is 16 September 2022.

Kindly provide the name, address, telephone number, fax number and email address of the person or organization submitting the comments. Submissions made after the deadline will not be considered. NERSA will collate all comments received and these will be taken into consideration when the decision regarding concurrence with the Ministerial determination is made.

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1. DEFINITIONS, ABBREVIATIONS AND ACRONYMS

1.1 DEFINITIONS

In this consultation paper, any word or expression to which a meaning has been assigned shall have a meaning so assigned and, unless the context otherwise indicates: -

Buyer	means, in relation to a new generation capacity project, any organ of state designated by the Minister in terms of section 34(1)(c) and (d) of the Act. In this regard the buyer is Eskom Holdings SOC Ltd.
Baseload	means the generating facilities within a utility system which are operated to the greatest extent possible to maximise system mechanical and thermal efficiency and minimise system operating cost. Typical example is the coal power station.
Dispatchable	means an electrical power system, such as a power plant, that can be turned on or off; in other words they can adjust their power output supplied to the electrical grid on demand. Most conventional power sources such as coal or nuclear power plants are dispatchable in order to meet the always changing electricity demands of the population. In contrast, many renewable energy sources are intermittent and non-dispatchable, such as wind power or solar power which can only generate electricity while their primary energy flow is input on them.
Eskom	means Eskom Holdings SOC Limited contemplated in section 3(1) of the Eskom Conversion Act, 2001(Act No.13 of 2001.
Government	means the Government of the Republic.
Independent Power Producer	means any person in which the Government or any organ of state does not hold a controlling ownership interest (whether directly or indirectly), which undertakes or intends to undertake the development of new generation pursuant to a determination made by the Minister in terms of section 34(1) of the Act.
Minister	means the Minister of Mineral Resources and Energy.
New generation capacity	means a project for the development of new generation capacity pursuant to a determination made by the Minister in terms of section 34 of the Act.
Organ of state	bears the meaning ascribed to it in section 239 of the Constitution.
Power purchase agreement	means an agreement concluded between a generator and the Buyer for the sale and purchase of new electricity generation capacity or electricity derived therefrom, or both.

Photovoltaic (PV)	means the the direct conversion of light into electricity. In order for this conversion to occur a photovoltaic device (or cell consisting of two semiconductor layers (in its simplest form) is used. The two layers are doped oppositely so as to create a net voltage across the terminals of the cell. The electric field within the vicinity of the interface of the two layers is responsible for "pushing" charges and thereby creating electricity when the device is connected to a load under the presence of light.
Procurer	means the person designated by the Minister in terms of section 34 as being responsible for the preparation, management and implementation of the activities related to procurement of new generation capacity under an IPP procurement programme including the negotiation of the applicable power purchase agreements, which person may or may not be a buyer.
Storage	means a complete electric storage system that can be connected to the Grid. It comprises of two major subcomponents: storage and the power conversion electronics. It mediates between variable sources and variable loads.
the Act	means the Electricity Regulation Act, 2006 (Act No.4 of 2006).
Wind Energy	means the natural occurring energy of the wind either directly as in windmills or to generate electricity.

1.2 ABBREVIATIONS AND ACRONYMS

DMRE	Department of Mineral Resources and Energy
IPP	Independent Power Producer
IRP	Integrated Resource Plan
MW	Megawatt
NERSA	National Energy Regulator

2. BACKGROUND

2.1 On 18 July 2022, NERSA received a draft determination from the Minister in terms of section 34 of the Act. The draft determination is aimed at addressing the energy gap in the country and also to implement the IRP 2019 decision by procuring:

1. 3 960MW from PV, which represents the capacity allocated under the heading "PV", for the years 2024 to 2030, in Table 5 of the IRP 2019;
2. 9 600MW from Wind, which represents the capacity allocated under the heading "Wind", for the years 2024 to 2027, in Table 5 of the IRP 2019; and
3. 1 231MW from storage, which represents the capacity allocated under the heading "Storage", for the years 2024 to 2030, in Table 5 of the IRP 2019.

The paper covers the following topics:

1. new generation capacity from Renewable Energy and Storage;
2. procurement process under the IPP Procurement Program; and
3. concurrence process to the ministerial determinations with indicative timelines.

2.2 NERSA has not yet formulated any opinions on the topics raised in summary above and which are detailed in this Consultation Paper, but is only raising them such that stakeholders can provide their opinions and inputs thereon.

3. NEW GENERATION CAPACITY FROM RENEWABLE ENERYGY (PV & WIND) AND STORAGE

3.1 The new generation capacity of 14 791MW from Renewables and Storage is needed in the short to medium-term to contribute towards security of supply thus minimising the risk of load shedding and/or extensive use of diesel peaking plants. Furthermore, due to the expected decommissioning of approximately 24 100MW of coal power plants in the period beyond 2030, attention must be given to add new generation

capacity which will assist to close the energy gap. Table 1 below shows the planned capacity to be added to the grid per technology from 2024 to 2030 from Wind and PV. The information in Table 1 is extracted from Table 5 of the IRP 2019. Table 1 indicates that 11 200MW should be generated from Wind and 4 000MW should be generated from PV, for the years 2024 to 2030.

Table 2 New generation capacity from Wind and PV

year	Wind (MW)	PV (MW)
2024	1600	
2025	1600	1000
2026	1600	
2027	1600	
2028	1600	1000
2029	1600	1000
2030	1600	1000
Total	**11 200**	**4 000**

3.2 Stakeholders are therefore requested to provide inputs on the following aspects amongst others: -

i. Is the determined capacity sufficient to ensure uninterrupted supply of electricity in the short to medium-term, noting that renewables are non-dispatchable while batteries are dispatchable (see definition of terms in Section 1.1)?
ii. In your view, are the types of technologies determined in line with best practice?

iii. What ratio of intermittent renewable energy to storage and flexible generation such as from gas should be built to ensure that the grid is balanced, given the imminent decommissioning of approximately 24100 MW of baseload capacity post 2030 from coal and the continuing deterioration of coal plant performance?

iv. Provide what you consider to be the risks and challenges associated with this new capacity.

v. Provide your comments on the socio-economic impact of the determined capacity from Wind, Solar PV and storage in terms of the number of jobs that can be created, including the objective of a just-transition from coal to clean technologies.

vi. Provide your thoughts on the cost that will be associated with establishing the new allocated generation capacity in line with the mandate to ensure long term sustainability of the electricity supply industry as well as affordability and equity.

vii. Do you think that it would be beneficial that Solar PV installations should also have a percentage of storage installed to prevent constraining the system during peak hours when solar users switch back to the grid?

viii. The IRP adopts different technologies in the energy mix based on least cost electricity supply option. Do you have any opinion with regards to the inclusion of the proposed technologies? What is your position regarding the inclusion of Solar PV and Wind in the energy mix?

ix. What do you think is the most optimal timelines within which this capacity should be made available on the grid, considering the urgency that is required to deal with load shedding in the country?

3.2 1 231 MW to be procured and generated from storage

3.2.1 According to Table 5 of the IRP2019, 1 575MW is allocated to storage in the years from 2024 to 2030. The Minister already allocated 344MW to the Eskom Battery Energy Storage (BESS) project determination that NERSA concurred to in February 2022. The Minister therefore seeks concurrence on the remainder of 1 231 MW from storage according to Table 5 of the IRP2019.

3.2.2 Energy storage complements Wind and Solar PV in that it provides an ancillary service to limit the problem of curtailment, where residual energy from Wind and Solar PV can be used to charge batteries during off-peak periods and discharge the energy stored in the batteries during peak periods when it is needed. Batteries also facilitate to smooth-out the variability of Wind and Solar which becomes useful when energy is being discharged during peak hours. Storage technologies include battery storage, Pumped storage schemes, fly wheel energy storage, hydrogen fuel cells and others. Stakeholders are therefore requested to provide inputs on the following aspects among others: -

i. Will the introduction of storage technology help to ensure uninterrupted supply of electricity?
ii. In your opinion is energy storage from batteries meeting the current government objective of adding new MWs on the grid or do you perceive storage to be more of an ancillary service rather than new generation?
iii. Should storage only be limited to battery storage or other storage technologies should be included?
iv. State what you consider to be the risks associated with this new generation capacity.
v. Provide your opinion on the socio-economic impact of the proposed battery storage plants, (i.e. how many jobs can be created based on the proposed capacity of 1 231 MW).

vi. Provide your thoughts on the cost that will be associated with the new allocated generation capacity from storage in line with the mandate to ensure long term sustainability of the electricity supply industry as well as affordability.

4. PROCUREMENT PROCESS UNDER THE IPP PROCUREMENT PROGRAMME

4.1 The electricity produced from new generation capacity shall be procured through one or more tendering procedures which are fair, equitable, transparent, competitive and cost-effective and shall constitute Independent Power Producer (IPP) procurement programmes as contemplated in the Regulations as stipulated in the draft determination from the minister of DMRE, which is also attached hereto as Appendix 1 for ease of reference.

4.2 The role of the procurer will be to conduct the procurement programmes, including preparing any requests for proposals and/or related and associated documentation, negotiating the power purchase agreements, facilitating the conclusion of other project agreements, and facilitating the satisfaction of any conditions precedent to financial close which are within its control.

4.3 Furthermore, the procurer shall in the appropriate procurement documentation specify any qualification and evaluation criteria applicable to this IPP programme. The procurement programmes shall target connection to the Grid for the new generation capacity as soon as reasonably possible in line with the timetable set out in Table 5 of the IRP 2019. Deviations from the timetable set out in Table 5 are permitted to the extent necessary considering all relevant factors including the time required for efficient procurement and the required construction timelines for the new generation facility, as stipulated in the draft determination from the minister, which is also attached hereto as appendix 1 for ease of reference.

4.4 The designated buyer is Eskom Holding SOC Limited and the procurer is the Department of Mineral Resources and Energy (DMRE). In lieu of the above, Stakeholders are requested to provide inputs on the following aspects among others:

i. Provide your thoughts on Eskom as the chosen buyer of the new generation capacity?
ii. Should it only be Eskom that is allowed to buy this electricity or should any other licensed Electricity Distributors (i.e. Municipalities or Private Distributor) also be allowed to buy?
iii. Do you think that Eskom should be restricted to only being the buyer, or should Eskom also be considered to participate in the bidding process?
iv. Provide your thoughts on IPPs as the chosen builders of the new generation capacity or should other organs of state participate as well?
v. Provide your thoughts on the method of procurement chosen for the procurement of new generation capacity?
vi. Should NERSA concur with this Ministerial determination as per the prescripts of section 34 of the Act?

5. CONCURRENCE PROCESS TO THE MINISTERIAL DETERMINATIONS

NERSA has processes and procedures in place to deal with requests for concurrence in terms of section 34 of the Act, which must satisfy the provisions of the National Energy Regulator Act and the Promotion of Administrative Justice Act, 2000. Due to the reasons provided in **APPENDIX 2**, 21 days is provided for the review of this consultation paper.

Written comments should be sent to NERSA for the attention of **Mr Mondli Shozi** at:

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The closing date for the submission is 16 September 2022.

6. APPENDIX 1: SECTION 34 DETERMINATION

GOVERNMENT NOTICES

DEPARTMENT OF MINERAL RESOURCES AND ENERGY

No.

DETERMINATION UNDER SECTION 34(1) OF THE ELECTRICITY REGULATION ACT, 2006 (ACT NO. 4 OF 2006)

The Minister of Mineral Resources and Energy ("the Minister"), in consultation with the National Energy Regulator of South Africa ("NERSA"), acting under section 34(1) of the Electricity Regulation Act, 2006 (Act No. 4 of 2006) (as amended) (the **ERA**) and the Electricity Regulations on New Generation Capacity (published as GNR. 399 in Government Gazette No. 34262 dated 04 May 2011) (as amended) ("Regulations"), has determined as follows:

1. that new generation capacity is needed to be procured to contribute towards energy security, accordingly, 12 231 megawatts (MW) should be procured to be generated from Renewable Energy and Energy Storage sources as described in paragraph 2 below, which is in accordance with the capacity allocated to those energy sources, under the headings "Storage"; "PV" and "Wind", for the years 2024 to 2030, in Table 5 of the Integrated Resource Plan for Electricity 2019 - 2030 (published as GN 1360 of 18 October 2019 in *Government Gazette* No. 42784)("IRP 2019");

2. the new generation capacity determined to be necessary as per paragraph 1 above ("the new generation capacity") shall be generated in accordance with following MW allocation per technology:

    a. Solar PV - 3960 MW;
    b. Wind - 9600 MW; and

c. Energy Storage - 1231 MW

3. electricity produced from the new generation capacity ("the electricity") shall be procured through one or more tendering procedures which are fair, equitable, transparent, competitive and cost-effective and shall constitute IPP procurement programmes as contemplated in the Regulations ("procurement programmes");

4. the procurement programmes shall target connection to the Grid for the new generation capacity as soon as reasonably possible in line with the timetable set out in Table 5 of the IRP 2019. Deviations from the timetable set out in Table 5 are permitted to the extent necessary considering all relevant factors including the time required for efficient procurement and the required construction timelines for such new generation capacity facility.

5. the electricity may only be sold to the entity designated as the buyer in paragraph 8 below, and only in accordance with the power purchase agreements and other project agreements to be concluded during the procurement programmes.

6. the procurer in respect of the procurement programmes will be the Department of Mineral Resources and Energy.

7. the role of the procurer will be to conduct the procurement programmes, including preparing any requests for proposals and/or related and associated documentation, negotiating the power purchase agreements, facilitating the conclusion of the other projects agreements, and facilitating the satisfaction of any conditions precedent to financial close which are within its control;

8. the electricity must be purchased by Eskom Holdings SOC Limited ; and

9. the electricity must be purchased from independent power producers.

7. APPENDIX 2: REASONS FOR DEVIATION (SECTION 4(B) PAJA ACT)

1. Section 9 of the National Energy Regulator Act, 2004 demands amongst others that the Energy Regulator must factor in public interest in the decision making and section 10 of the same Act expects the decision of the Energy Regulator to be taken within a fair process recognizing section 33 and 195 of the Constitution of the Republic of South Africa, 1996. This procedural fairness principle enunciated above resonates with the provisions of section 4 of the Promotion of Administrative Justice Act, 2000.

2. NERSA as an administrative body does not only subject its process to public participation for the sake of ensuring legal compliance but also to enable input from stakeholders to have an influence in the decision making therefore the process must be timely, effective, adequate, formal, contain appropriate information, proper notification and consideration of inputs received. This would have satisfied the requirement of section 33 of the Constitution of the Republic of South Africa and related applicable laws.

3. The above is a generally accepted position within a democratic Republic and to uphold the rule of law. This generally acceptable position has exceptions to it and this is because it involves public administration wherein certain matters may need speedy attention than others. This exception is not a random act in the wilderness. Promotion of Administrative Justice Act has set parameters which must be satisfied to ensure reasonable and justifiable deviation.

4. Context to the matter at hand has been advanced in this submission which includes the purpose of why this process born from the Integrated Resources Plan and section 34 of the Electricity Regulation Act is being undertaken. It is public knowledge about the developments in the electricity industry and the challenges faced by Eskom which is impacting on the greater good of the country regarding economic development, social security and business activities and this process is aimed at injecting assistance to the situation.

5. It is also important to locate the position of this process in the scheme of decision making. NERSA process is primarily to evaluate what the Minister has proposed and apply its mind to the facts as the custodian of the regulatory framework and make its own independent decision to agree or not agree with the Minister. The process is by no means an influence to the bidding and decision making process.

6. The generally acceptable dispensation which has been alluded to above has been considered in the premise against the objectives of what the process is aimed at and found to be protracted and prohibitive. In the premise, it has been reasoned that rather than abandon in totality the public participation process, the number of days that will be generally undertaken be minimized. This has been informed by the fact that, the technology being considered is not new in the dispensation, stakeholders have been engaged previously and NERSA still has the records of the input.

7. There is also the need for the specificity in the reasoning to satisfy the dictates of PAJA to reflect reasonably justifiable reasons.

8. Electricity Regulation Act enjoins NERSA to ensure security of supply, promote the diverse use of energy sources and facilitate investment. This process serves as gate opener to ensuring that the objects are achieved without a prejudice to any source. NERSA conclusion of this matter will enable efficient processing of the requirements by various role players.

9. What is expected of NERSA is the process is being a role player in enabling the kick starting of the process, the role of NERSA is only to enable the Minister to start the new generation capacity process which is administered by the Department. This obligation arises from the provisions of section 34 of the Electricity Regulation Act. This process does not venture into the administration of the procurement and adjudication of the bids received.

10. As alluded to earlier, this process is an enabler primarily because of the statutory provision of the Electricity Regulation Act. The conclusion of this process only has a principle effect but the likely effect will only be realized by the decision of the Minister when initiating the procurement process. The Minister can change the capacity to be procured.

11. As required by our enabling law, prolonged delay could have a ripple effect in the processing, administration and finalization of the new generation capacity. It must be recognised that, this process is aimed at soliciting principle input into NERSA decision and the concurrence binds the Minister on the maximum threshold of the technology but the Minister can go lower that the maximum therefore, our speedy conclusion of this process will enable the process to respond to the challenges that the electricity industry is exposed to and related effects.

12. The handling of inputs solicited from stakeholder anchors the principles that section 195 of the Constitution of the Republic of South Africa demands of public administration. The inputs will ensure a direct linkage between the objectives and decision making and this will also be reflected by the internally deployed mechanisms to take decisions.