The Director General

Department of Mineral Resources and Energy

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21 May 2021

Dear Director General,

WRITTEN COMMENTS ON THE PROPOSED AMENDMENTS TO THE LICENCING EXEMPTION AND REGISTRATION NOTICE

This document provides written comments by Meridian Economics about the Licencing Exemption and Registration Notice published on 23 April 2021 in the Government Gazette (No. 44482) by the Department of Mineral Resources and Energy (DMRE). First and foremost, we value the opportunity to provide input into the amendment of Schedule 2 of the Electricity Regulation Act (No. 4 of 2006) and commend the recognition by the DMRE of the need to lift the current generation licence exemption threshold.

Considering South Africa's worsening power crisis and dire economic outlook, it is critical to seek bold opportunities to unlock additional power and investment. Facilitating the expeditious uptake of embedded generation presents the largest quick-win opportunity to reduce load-shedding and stimulate investment, and investor confidence, in South Africa's power sector.

The amendment of Schedule 2 can play a critical role in facilitating this opportunity. We recommend four key changes to the draft issued by the DMRE which will establish an enabling framework for embedded generation projects. These recommendations are summarised as follows:

1. The licence exemption threshold should be increased to at least 50 MW,
2. Licence-exempt facilities must be allowed to sell to multiple customers and aggregators,
3. "Own use" projects should be defined as a specific project category and exempted from licencing,
4. 'Interconnected' projects should be accommodated in the licence exemption.

By incorporating these key changes, significant additional generation capacity could be unlocked in the South African embedded generation sector. This will go a long way to addressing the country's short-term power supply gap, but also signals an important shift towards a fit-for-purpose, 21st century electricity sector.

1 MERIDIAN ECONOMICS – WHO ARE WE?

We are a specialised advisory group and think tank providing executive-level decision support, strategic advice and analytics capabilities with a particular focus on South Africa's just energy transition. We develop evidence-based outputs to inform decision-making processes in the power sector, and continue to provide thought leadership into the electricity, climate and finance space both in South Africa and internationally.

2 INTRODUCTION

- **South Africa's power crisis is worsening.** Despite reduced economic activity due to the COVID-19 pandemic and national lockdown, 2020 was South Africa's worst year on record for load-shedding with an upper limit of 1,798 GWh of load shed. This cost the economy R80-160Bn in 2020 and continues to hinder SA's economic recovery. In March 2021, South Africa had already seen 783 GWh of load shedding, 43% of the 2020 total.[1]
- **Current interventions will not address the energy supply gap.** South Africa's latest short-term capacity shortfall is estimated between 4,000-8,000 MW, resulting in an energy supply gap of between 4,500-17,500 GWh. It is likely that there will be a shortfall of energy supply until at least 2025, even with progress on restoring Eskom's Energy Availability Factor and despite the procurement of new generation capacity in line with the Integrated Resource Plan (IRP 2019) and through the RMIPPPP[2].
- **Delays in the implementation of the IRP 2019 and RMIPPPP will intensify the energy shortfall**. The procurement of new generation capacity in line with the IRP 2019 is at least one year behind schedule, resulting in actual connection dates for REIPPPPP[3] Bid Window 5 projects in late-2023 or early-2024, instead of 2022. Furthermore, the connection of RMIPPPP preferred bidder projects is likely to be delayed. Around 1,220 MW out of the 2,000 MW allocation was awarded to three Karpowership projects, which have subsequently been faced with legal challenges and permitting issues[4]. This will most likely lead to serious delays in these projects which will thus be unable to meet the original commercial operation deadline, further contributing to South Africa's supply gap.
- **Facilitating the substantial uptake of embedded generation projects expeditiously presents the largest quick-win to address part of this shortfall and alleviate the large economic cost of power shortages**. There is now widespread support for lifting the current Schedule 2 licence-exemption threshold to at least 50MW to unlock much needed additional capacity. This has been expressed in various public statements by Eskom, the Minerals Council and numerous industry groups[5] and COSATU. Lifting the licence-exemption threshold will send a clear and important market signal to project developers and investors that Government is inviting investment and implementing the necessary reforms to facilitate the process.

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[1] Council of Scientific and Industrial Research (CSIR), 2021. "Statistics of utility-scale power generation in South Africa in 2020."

[2] Risk Mitigation Independent Power Producer Procurement Programme for 2,000MW of additional emergency power.

[3] Renewable Energy Independent Power Producer Procurement Programme

[4] Carnie, T. 2021. "Despite Eskom approvals, Turkish powerships still need Transnet buy-in for 20-year harbour moorings." Available: https://www.dailymaverick.co.za/article/2021-03-31-despite-eskom-approvals-turkish-power-ships-still-need-transnet-buy-in-for-20-year-harbour-moorings/

[5] Creamer, M. 2021. "Self-generation threshold must be increased, respondents concur" Available: https://www.polity.org.za/article/self-generation-threshold-must-be-increased-respondents-concur-2021-02-04

3 SPECIFIC RECOMMENDATIONS

The draft amendment to Schedule 2 issued on the 23 April 2021, as it stands, will not adequately unlock the potential for the embedded generation sector to contribute to reduced load shedding and stimulate investment in South Africa's power sector. This is because licence exemption threshold is set too low, and generation facilities are restricted in terms of whom they can sell power to. We, therefore, recommend four specific changes to the draft Schedule 2 amendment as described below, and reflected in Annexure A (a marked up version of the draft):

1. **The licence exemption threshold should be increased to at least 50MW**
   - As shown by recent analyses, drastically increasing the licence exemption threshold to 50MW could unlock an estimated 5,000 MW of capacity over the next 4-5 years[6]. This would supply an additional ~11,000 GWh per year, which could go a long way to addressing South Africa's energy shortage.
   - Importantly, raising the licence exemption threshold to at least 50MW to accommodate larger embedded generation projects will be necessary to reap the benefits of 'economies of scale'. Larger projects result in lower fixed costs and thereby produce cheaper power. If this power is sold to multiple customers, which reduces offtake risk, a stronger investment case is created than that of a smaller, more expensive project selling to a single customer.
   - Raising the threshold to only 10MW will limit the embedded generation investment case by restricting the licence exemption to smaller, more expensive projects with a limited number of customers, lower economic viability and this may deter several potential investors and financiers.
   - Ultimately, capitalising on the benefits of economies of scale is critical to enabling embedded generation projects to be rolled out at the pace and scale required to reduce power shortages on the grid. A larger rollout will also likely have larger benefits for value chain localisation of project-related components and services.
   - Therefore, in clause 3.1. of the proposed amendment, we propose that the licence-exemption threshold should be raised to at least 50 MW.

2. **Licence-exempt facilities must be allowed to sell to aggregators/traders and multiple customers**
   - The proposed amendment includes highly restrictive specifications for whom licence-exempt generation facilities can sell power to – either to an 'end-use customer' or a 'related customer' as demonstrated in the following clauses [emphasis added]:

     *3.1.1 the generation Facility supplies electricity to a customer who is an **end-use customer** and there is no wheeling of that electricity;*

     *3.1.2 the generation Facility is operated to supply an **end-use customer or related customers** by wheeling;*

   - It is important to note that "end-use customer" is a *new* definition that has been included in the 23 April 2021 proposed amendment (clause 1.8), which did not exist in previous versions. By restricting the sale to "end-use customer", the proposed amendment specifically excludes the possibility for generation facilities to sell power to any form of aggregator (e.g., distributors, including municipalities or Eskom, and traders) which are all important players in South Africa's electricity market development.

[6] Meridian Economics, 2021. "Survey results: scoping interest in the South African distributed generation sector." Available: https://meridianeconomics.co.za/wp-content/uploads/2021/01/2021-01-19-Briefing-note-survey-results.pdf

- There is no justifiable economic reason for imposing this restriction, it will only have the effect of further limiting the investment in new embedded generation capacity that we so urgently need.
- Like in any market, the development of a class of aggregators (including electricity traders and wholesalers) will be important to reduce offtake risk for many embedded generation projects and thereby enable them to access debt finance. The issue of offtake risk will be less important for larger projects which can afford to find their own blue-chip customers with secure balance sheets, but smaller projects will often have to rely on the risk diversification provided by a trader to reduce project development costs[7].
- Therefore, in clause 3.1.1, the words "end-use customer" should be replaced by "customer" which already defined in the Act.
- The Schedule also specifically excludes the possibility of generation facilities selling to multiple, unrelated customers. Based on interactions with prominent players in the embedded generation sector[8], it is clear that having a number of off-takers is a critical avenue for diversifying risk and thereby enabling access to project finance. The current proposed amendment only allows for projects to sell power to "end-use customers" and "related customers"[9], and does not accommodate the sale to multiple, unrelated customers ('one-to-many' power sales).
- Excluding the possibility for licence-exempt projects to make 'one-to-many' sales is a substantial and unjustified deterrent to embedded generation investors. The risk premium of 'one-to-one' versus 'one-to-many' power sales is often too high to motivate investment. Industry experts suggest that for a project up to 50MW, the lowest average customer per project multiple should be around 5 to ensure sufficient diversification of risk.
- Therefore, in clause 3.1.2, the phrase 'an end-use customer or related customers' should be replaced with 'any number of customers.'

3. **Define "own-use" as a new category of project and completely exempt these projects from licencing**
    - A new definition should be included in the amendment for "own use" projects. These should be defined as: *"any generation Facility, irrespective of whether the electricity is used on the same Property as the generation Facility, or is Wheeled over either or both a distribution power system or the transmission power system operated solely to supply customers;"*
    - There is no economic rationale to regulate market access of "own-use" projects. Therefore, we propose that these should be defined as another licence-exempt project category, irrespective of their capacity.
4. **The proposed Schedule must address the issue of 'interconnected' projects, which should also benefit from the exemption**

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[7] In the German power market, there are now more than 800 electricity traders. In South Africa, we have seen growing interest in this area through the development of PowerX which now has more than 100 customers, and with the emergence of other aggregators such as Energy Exchange of Southern Africa.

[8] Personal communications with Meridian Economics.

[9] "Related customers" means customers which are related and inter-related to each other within the meaning contemplated in section 2 of the Companies Act (71 of 2008). A related customer includes "different legal entities within the same group of companies."

- The proposed amendment must allow for generation facilities that are connected to a private distribution system on the property on which they are built, but not directly connected to the public distribution or transmission system itself, to benefit from the exemption. For instance, generation projects that are built on large mining and agricultural properties and connected to private distribution systems on the property, not directly to the grid.
- In this case, the generation facility will need to have a use of system agreement with the customer (for example, the mine), but the customer will also be Eskom's customer and will have a use of system agreement with Eskom, which will need to be amended accordingly – this is not a problem. Eskom cannot (and will not) also have a connection agreement with the generation facility, because it will not have a physical point of supply with the facility.
- Furthermore, if this generator wishes to wheel some of the power to third parties over the interconnected network (if it generates more than its local customer consumes) it will need to have a wheeling arrangement in place with the relevant network operators (plural). We therefore argue that it does not need a "connection agreement" as set out in clause 3.1.3, it needs a "wheeling agreement" / "wheeling arrangement".

  *3.1.3. the generator has entered into a **wheeling** ~~**connection**~~ **agreement** with the holder of the distribution licence in respect of the power system over which the electricity is to be wheeled.*

Kindly refer to Annexure A for a marked-up version of the draft Schedule 2 issued by the DMRE on 23 April 2021 which demonstrates the above recommended changes.

4 IMPLICATIONS: MOVING TOWARDS A FIT-FOR-PURPOSE 21ST CENTURY ELECTRICITY SECTOR

- Importantly, the above recommendations only pertain to issues of *market access* for embedded generation projects. None of the recommendations have implications for technical and environmental permitting of embedded generation projects, which are dealt with outside of the exemption schedule by separate authorities (not by the National Energy Regulator of South Africa) and which we argue should remain in place. Generation projects will still need to demonstrate technical and environmental compliance, enforced by Eskom or municipal distributors, and the relevant environmental department.
- To provide some international context, removing barriers to market access for decentralised power generation projects is now common across the world. India, for example, has delicenced generation projects completely and there are no restrictions on sale to different types of customers, provided that projects comply with relevant technical grid codes. Neither Spain nor Australia has market access licencing, only strict technical compliance standards. The United Kingdom market licence threshold is set at 50MW, with licence exemptions available to projects up to 100MW on a case-by-case basis.
- Unlocking additional embedded generation capacity will not impact Eskom negatively in the near-term. In fact, additional power on the grid will reduce the need for Eskom to utilise expensive stop-gap measures (such as diesel-fired peaking turbines) and create more opportunities for Eskom to optimally utilise its pumped storage assets – thereby realising a cost saving. Furthermore, ramping up the number of customer wheeling agreements will see a new revenue stream for both Eskom and municipalities, which generate income through wheeling charges.

- Significantly for South Africa's economic recovery, the installation of 5,000 MW of embedded generation could result in investment of an estimated R75-85 billion and approximately 12,000-16,000 direct jobs each year, which will only grow over time (this does not include those that will be created in manufacturing and service industries – which is likely to be significant).

By incorporating the key changes to Schedule 2 outlined in this document, significant additional capacity can be unlocked in the embedded generation sector. This will have a much needed positive impact on alleviating power constraints as well as catalyse power sector investment, localisation and job creation. We thank the DMRE for the consideration of our comments.

Yours sincerely,

Dr Grové Steyn

Managing Director of Meridian Economics

ANNEXURE A

Proposed amendments

xxx Interconnection issue

xxx End-use customer issue

xxx Licence threshold and multiple customer issue

Additional words / definitions

ELECTRICITY REGULATION ACT, 2006

LICENSING EXEMPTION AND REGISTRATION NOTICE

I, Gwede Mantashe, the Minister of Mineral Resources and Energy, hereby : -

a) under section 36(4) of the Electricity Regulation Act, 2006 (Act No. 4 of 2006) ("the Act"), and after consultation with the National Energy Regulator ("Regulator") and any person who may be affected, intend to amend Schedule 2 to the Act by substituting it with the Schedule ("the Schedule 2") set out in the Annexure hereto; and

b) under section 9(1) of the Act. and in consultation with the Regulator, intend to increase the threshold for embedded generation from 1 MW to 10MW and determine that a person who operates a generation facility contemplated in items 3.1, 3.2, 3.3, 3.4 or a person who performs the activities of a reseller as contemplated in item 3.7 of the Schedule, must register with the Regulator.

Interested persons and organisations are invited to submit, within 30 days, written comments on the proposed amendments to the Licensing Exemption and Registration Notice to the Director -General. Department of Mineral Resources and Energy, Private Bag X96, Pretoria 0001; Matimba House 192 Visagie Street, Pretoria: or email to Matthews Bantsijang. (Email Address: Matthews.Bantsijang @dmre.gov.za, telephone number: 012 406 4776). Comments received after the closing date may not be considered.

ANNEXURE

SCHEDULE 2

EXEMPTION FROM OBLIGATION TO APPLY FOR AND HOLD A LICENCE

1. For purposes of items 2 and 3, unless defined in Chapter 1 (Section 1) of the Electricity Regulation Act:

1.1. **"Capacity"** means, in respect of a Unit or the Facility at any time and from time to time, the capacity (expressed in megawatts or MW) of such Unit. or the Facility. as the case may be to generate and provide Energy to the Delivery Point;

1.2. **"Code"** means the Distribution Code, the Transmission Grid Code or any other Code approved by the Regulator;

1.3. **"Connection agreement"** means an agreement detailing the conditions under which the Distributor or Transmitter intends to connect the customer. This agreement specifies the conditions applicable to an end-use customer or any other connection such as an Embedded Generator;

1.4. **"Customer"** means a person or legal entity that has entered into an agreement with a Distributor or Transmitter for the provision of distribution or transmission services. An entity may be an Embedded Generator, another Distributor, an end -use customer (including generators), an international customer, a retailer or a reseller;

1.5. **"Delivery Point"** means the physical point, situated on the Site of the Facility, where the energy output is to be delivered by the generator;

1.6. **"Demonstration purposes"** means the Facility constructed for the purpose to prove or test commercial and or technical viability within a specified time period;

1.7. **“Embedded Generator"** means a legal entity that operates one or more Unit(s) that is connected to the distribution system. Alternatively a legal entity that desires to connect one or more Unit(s) to the distribution system;

“Own Use” means any generation Facility irrespective of whether the electricity is used on the same Property as the generation Facility, or is Wheeled over either or both of a distribution power system or the transmission power system operated solely to supply customers;

1.8. ~~**"End-use customer"** means a user of electricity connected to the distribution system;~~

1.9. **"Facility"** means the generation (or distribution facility as applicable) located at the Site and comprising all plant, machinery and equipment, all associated buildings, structures, roads on the Site that are not national, provincial or municipal roads, and other appurtenances, together with all required interfaces to be constructed for the safe, efficient and timely operation of that facility and, for the avoidance of doubt, excluding the transmission connection works or distribution connection works, as the case may be;

1.10. **"Point of Connection"** means the electrical node on a distribution or transmission system where a customer's assets are physically connected to the Distributor's or Transmitter's assets;

1.11. **"Property"** means:

1.11.1. a farm, agricultural holding, erf or sectional title unit; and

1.11.2. a building located on that farm, agricultural holding, erf or sectional title unit, notwithstanding that the building extends beyond the boundary of that farm, agricultural holding, erf or sectional title unit;

1.12. ~~**"Related customers"** means customers which are related and inter -related to each other within the meaning contemplated in section 2 of the Companies Act, 2008 (Act No.71 of 2008) ;~~

1.13. **"Reseller"** means a person who purchases electricity from a trading entity in order to sell such electricity to a customer;

1.14. **"Site"** means the property upon which the Facility is to be constructed and operated;

1.15. **"Unit"** means a separate electricity generating unit or section (comprising multiple units) forming part of the Facility, which is or are capable of generating and delivering energy to the Delivery Point. and "Units" means all or any combination of them;

1.16. **"Waste"** has the same meaning as defined under section (1) of the National Environmental Management: Waste Act (Act No. 59, 2008);

1.17. **"Wheeling"** means providing access between an Embedded Generator (or a generator that is not owned by Eskom) and a third party to facilitate the trading of energy;

2. The following activities are exempt from the requirement to apply for, and hold a licence under the Act and these activities are not required to be registered with the Regulator-

2.1. The operation of a generation Facility for the sole purpose of providing standby or backup electricity in the event of, for a duration no longer than, an electricity supply interruption,

2.2. The operation of any generation Facility provided that:

2.2.1. the Facility does not have a Point of Connection;

2.2.2. if the Facility has a capacity of no more than 100 kilowatts and has an existing Point of Connection, the Distributor (and not the Regulator) has prescribed the conditions relating to the continued use of the Point of Connection; and the Regulator has prescribed the manner in which the Distributor shall keep a register of each Facility.

3. The following activities are exempt from the requirement to apply for and hold a licence under the Act, but these activities must be registered with the Regulator;

3.1. The operation of a generation Facility which complies with the *Grid Connection Code for RPPs in South Africa - Version 2.8 (July 2014)* with a capacity of no more than ~~[10MW] 10MW~~ 50MW with a Point of Connection on the distribution power system, in circumstances in which-

3.1.1. the generation Facility supplies electricity to a customer ~~who is an end-use customer~~ and there is no wheeling of that electricity; or

3.1.2. the generation Facility is operated to supply ~~an end-use customer or related customers~~ any number of customers by wheeling; and

3.1.3. the generator has entered into a ~~connection~~ wheeling agreement with the holder of the distribution licence in respect of the power system over which the electricity is to be wheeled.

3.2. Own Use generation of electricity whether or not connected to a distribution power system or the transmission power system and irrespective of Capacity.

3.3. The operation of a generation Facility for demonstration purposes only, whether or not the Facility is connected to a transmission or distribution power system, in circumstances in which-

3.3.1. if the Facility is connected to the transmission or distribution power system, the generator has complied with the requirements of the Code; and

3.3.2. the Facility will be in operation for not more than 36 months.

3.4. The operation of a generation Facility where the electricity is produced from waste or the residual product of an underlying industrial process, in circumstances in which-

3.4.1. the generation Facility is operated solely to supply electricity for consumption by an end-use customer who is related to the generator or owner of the generation Facility within the meaning contemplated in section 2 of the Companies Act, 2008 (Act No. 71 of 2008); and

3.4.2. generation Facility complies with the Code;

3.5. The continued operation of an existing generation Facility which, immediately prior to the date of commencement of this Schedule, was exempt from the requirement to apply for and hold a licence under the Act, in circumstances in which-

3.5.1. the generation Facility has complied with the Code and is connected to the transmission or distribution power system; and

3.5.2. the generation Facility has filed for registration with the regulator within 6 months of commencement of the registration process by the Regulator.

3.6. The operation of a distribution Facility up to the Point of Connection that connects the generation Facility contemplated in items 3.1 to 3.4 –

3.6.1. where there is conveyancing of electricity through the transmission or distribution power system.

3.7. The trading of electricity by a reseller in circumstances in which-

3.7.1. the price charged by the reseller to customers does not exceed the tariff that would have been charged to such customers for the electricity if it had been purchased from the holder of a distribution licence for the area in which the electricity is supplied to the customer; and

3.7.2. the reseller has entered into either a service delivery agreement in accordance with the Municipal Systems Act, (Act No 32 of 2000) (where the licensed distributor is a municipality) or a similar agreement with the distributor (where the licensed distributor is not a municipality) that regulates the relationship between the reseller and the holder of the distribution licence and the obligations of the reseller in respect

of the quality of supply to customers; and the Regulator has ratified the general terms and conditions of such service delivery agreement.