

CUTTING THROUGH RED TAPE: A SHORTCUT TO SOLVING SOUTH AFRICA'S POWER CRISIS

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EXECUTIVE SUMMARY

South Africa is in urgent need of strategies to minimise power shortages and reduce the negative impacts of load-shedding. However, the quickest response to the power crisis – unlocking distributed generation projects in residential, commercial and industrial sectors to produce electricity for own use or for sale on to other customers – remains largely unavailable, bound up in regulatory red tape.

The form of South Africa's electricity supply sector emerged in an era when large generation technologies dominated and centralised, monopolistic market structures were the norm. The current regulatory framework and associated roles and responsibilities of the National Energy Regulator of South Africa (NERSA) and Minister of Mineral Resources and Energy still reflect this paradigm.

Internationally, monopolistic electricity sector structures have long been acknowledged as an inefficient and expensive way of supplying power. South Africa's own 1998 Energy Policy White Paper recommended the introduction of competition in electricity generation. The recent and highly disruptive change brought on by the dramatic cost decline in renewables and battery storage, coupled with innovations in smart grid technologies, has further rendered the megaproject monopoly paradigm that dominates South Africa's electricity supply sector out-of-date. With disruptive changes in the techno-economic paradigm for power generation, the

economic rationale for market access licensing has fallen away. Regulatory reforms to enable market access of decentralised power projects have become common across the world.

This note addresses one key aspect of South Africa's current regulatory framework which it proposes is no longer fit-for-purpose: **the regulation of market access for grid-connected projects**. The requirement to obtain a NERSA generation licence to gain market access (which often includes the need for a prior Ministerial approval) has discouraged new investment in generation projects and protected the monopoly of the incumbents, thereby contributing to capacity shortages and load shedding.

Grid-connected projects are separately regulated for environmental and technical purposes by the Department of Environment, Forestry and Fisheries and the relevant network service providers (Eskom, municipality or private distributor) respectively.

The current market access licensing regime is provided for by the Electricity Regulation Act (4 of 2006) (ERA) which concentrates almost all decisions around new generation capacity in the hands of the Minister of Mineral Resources and Energy through the need for determinations or approvals, embodying a paradigm of centralised control.

Currently, all grid-connected projects between 100kW and 1MW must be registered with NERSA to obtain market access. Those greater than 1MW must obtain a

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generation licence from NERSA. For a licence application to be processed, the applicant must demonstrate evidence of compliance with the latest Integrated Resource Plan (IRP) (evidence that the project is catered for in the IRP's technology capacity allocation and that this capacity allocation has not yet been reached), or obtain a Ministerial letter approving deviation from the IRP. The criteria for assessing IRP compliance or obtaining a Ministerial deviation are unclear, creating unnecessary risk for project developers.²

These non-trivial requirements and project development risks have deterred many potential investors from progressing power generation projects that would have eased power shortages. Maintaining market access restrictions in South Africa has thus become counterproductive, exacerbating load shedding by increasing the difficulty of developing urgently required generation capacity.

To address this issue, this brief proposes easing market access registration and licensing requirements. The proposals contained in this brief do not imply changes to current environmental approvals, technical power system standards and grid access "permitting" (which remains important for power system stability). In particular, this brief proposes expanding the highly restricted categories of projects which are licence-exempt (but which still require registration); and addresses the need to streamline registration and licensing processes at NERSA.

Specifically, the following key reforms are proposed:

1. **Define generation for "own use" in Schedule 2 of the ERA and exempt these projects from market access licensing even if grid-connected, regardless of their size.** "Own use" generation should be defined as *any project where the electricity off-taker has an equity stake in the generation facility, irrespective of whether the electricity is used on the same site as the generation facility, or whether the electricity is wheeled through the grid.*
2. **Lift the licence exemption threshold for all other grid-connected projects from 1MW to at least 50MW³ (these projects will still require registration),** to unlock additional urgently required pent up capacity options, irrespective of whether these projects:
 - Supply electricity to a single or related customer with or without wheeling of that electricity,
 - Sell electricity to multiple unrelated customers with or without wheeling of that electricity, or to an electricity trader,
 - Sell excess electricity that is not consumed on site to a distribution entity, allowing generators in areas supplied by electricity distributors to be net producers of electricity (generators should be compensated at a tariff reflecting the economic value of that supply).
3. **Simplify and fast track the registration of licence-exempt projects (between 100kW and 50MW) by setting up an appropriate online portal to instantly process applications.** Registration should serve merely to upload and record project information, supply agreements and grid connection approvals (obligatory for all electrical installations and obtained from the relevant network service provider – generally Eskom or the municipal distribution entity). The registration system should provide a transparent record of all projects being implemented, enabling an understanding of the distributed generation market size, but should not be subject to NERSA discretion.
4. **For all projects greater than 50MW, establish an efficient online process for the submission of relevant documents and approvals for generation licence applications.** The information required in the current NERSA generation licence application form is geared to large projects (especially coal-based projects) with complex contractual and fuel-supply agreements. There is a need to simplify and update the submission documents required to be

² In a recent modest concession as of 30 October 2020, all grid-connected "self-generation" projects above 1MW supplying "single or related customers" (for on-site consumption or with power wheeled through the grid) have been granted Ministerial approval for deviation from the IRP (which implies that they were not originally catered for in the IRP).

³ The 50MW figure is somewhat arbitrary. It is not clear that there is an economic rationale for market access licencing at all, but this proposition requires further investigation in the case of mega projects. Keep in mind that the environmental approval process already provides an opportunity to consider the broader social and economic implications of a project.

more relevant to generation projects which are much smaller, do not involve complex contractual arrangements or major future decommissioning costs and can be installed quickly utilising space which would be otherwise unused. This will streamline the processing of licence applications.

5. **Require NERSA to publish a register of all licences issued on their website adding all new applications within a week of receipt**, updating the status of these applications as *received*, *awarded* or *refused* and providing reason for refusal.
6. **Exempt battery storage projects from market access registration or licensing, to bring clarity to the regulatory requirements for battery storage.** The ERA does not contemplate battery storage projects. NERSA appears to treat battery storage investments as generation projects, subjecting them to the same regulatory complexities as other generation projects. However, battery storage is a

technology that provides grid services by storing excess energy and dispatching it flexibly, rather than a generation option. It should only need to demonstrate compliance with the necessary technical standards and requirements of the grid operator. No economic rationale exists to subject it to NERSA market access regulation.

These changes do not require new primary legislation and can be implemented within a few months by gazetting new regulations as allowed for in the Electricity Regulation Act 4 of 2006 and streamlining rules and processes at NERSA.

This brief only focusses on South Africa's market access licensing regime, which is one component of the broader regulatory system. In line with international experience, further comprehensive reforms will be required to grow a competitive and adaptable electricity sector that best serves the urgent need for economic recovery, growth and jobs in South Africa.

1 INTRODUCTION

South Africa's electricity sector faces an almost perfect storm. Its reliance on centralised procurement and monopoly, and a commensurate regulatory regime, manifests in the sector's failure to achieve its primary objectives: supplying citizens and the economy with reliable, affordable and clean electricity without placing a further burden on the fiscus. This has resulted in increased load shedding and ongoing requests by the state-owned monopoly, Eskom, for enormous and continued fiscal bailouts when South Africa can least afford it.

Furthermore, as the global energy transition accelerates, the cost deflation and decentralised nature of renewable energy and storage, combined with an escalating global fossil fuel divestment movement, have fundamentally disrupted our centralised legacy technological paradigm and megaproject business model.

In the short term a particular cause for alarm is that the current public power procurement processes, including the Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP)⁴ and other centralised procurement strategies (REIPPPP),⁵ are not enough to address South Africa's critical energy supply gaps. We need to do more, faster but outdated regulatory paradigms are stumbling blocks to rapidly restoring security of supply.

Key barriers are the highly restrictive market access requirements set out in the ERA which concentrates almost all decisions on new generation capacity in the hands of the Minister of the Department of Mineral Resources and Energy. These arrangements bar an enormous opportunity to unlock additional generation capacity and mitigate some of the severe impacts of load shedding on the South African economy. This note highlights the urgency of amending this market access

restriction, by reforming the licensing requirement in Schedule 2 of the ERA.

1.1 2020 WILL BE SOUTH AFRICA'S WORST YEAR OF LOAD-SHEDDING

Despite significantly reduced electricity demand due to the impact of Covid-19, recent analysis by the CSIR (2020) shows that by July 2020 load shedding had already surpassed that of 2019 (the country's previous worst record).

Without interventions to accelerate current electricity sector investment plans, load shedding is expected to persist until at least 2025. Eskom has embarked on urgent and extensive efforts to maintain its ageing coal fleet, but the fleet continues to run at a significantly reduced Energy Availability Factor (EAF). Eskom's Medium-Term System Adequacy Outlook (MTSAO) suggests that with a low EAF (64%) and moderate demand forecast, the capacity supply gap will range between 2000MW and 4000MW of dispatchable equivalent capacity⁶. The addition of new capacity through public procurement is expected to ease the forecast capacity gap, but will likely only do so from 2022 (RMIPPPP) and 2024 (REIPPPP). Even so this will not restore the power system to adequacy. Further interventions are required to address unserved energy which is expected to persist to at least 2024 (Eskom MTSAO, 2020:22). Any further delays to procurement will only worsen the energy shortage.

The economic cost of load shedding is difficult to ascertain. The direct cost is estimated at between R60-billion and R120-billion for 2019 and will increase in 2020 and subsequent years as the duration and average level of load shedding increases. With the serious negative implications this has for economic sentiment, investment and job creation the broader economic cost is much greater. It is widely accepted by analysts and rating agencies that this crisis places a hard and binding

⁴ An additional 2000MW of "emergency power" is currently being procured through the Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP), however the technical requirements (particularly those disallowing multiple facilities to meet dispatchability requirements) are written for diesel- and gas-to-power projects, in effect excluding competition from faster cheaper renewables projects with storage. None of these projects have environmental permits and will involve complex consultative and approval processes through our ports. As such they are highly unlikely to meet the December 2021 deadline.

⁵ In September 2020 the Department of Mineral Resources and Energy published its latest Section 34 Determination to bring 6.8GW of renewables, 3GW of gas and 1.5GW of coal onto the grid in accordance with the country's Integrated Resource Plan (IRP2019).

⁶ This is very sensitive to factors such as demand forecasts and coal power station reliability. It *does not* indicate the amount of additional new capacity that needs to be built (because power stations do not have a 100% capacity factor). The actual amount of plant required to be built is higher than the capacity gap.

constraint on South Africa's economic recovery plans post-Covid-19.

1.2 SOUTH AFRICA HAS AN IMMEDIATE OPPORTUNITY TO UNLOCK ADDITIONAL POWER

While the Independent Power Producer (IPP) Office's public procurement programme will ultimately bring on additional capacity it will not be fast enough to meet short- to medium-term requirements and is not an appropriate mode to unlock the economic potential of distributed generation. South Africa's fastest and most effective option for reducing load shedding now is to unlock distributed generation supply options in the residential, commercial, agricultural, industrial and mining sectors.

It is thus not surprise that there is huge investment interest in projects like these in both the public and private sectors, and they hold enormous potential for job creation and small, medium and micro enterprise development (Meridian Economics, 2020; Montmasson-Clair et al, 2020).

The CSIR estimates that creating an enabling regulatory regime could unlock 3400MW of small- to medium-scale grid-connected electricity by 2022 (CSIR, 2020). This has the potential to create over 30 000 construction jobs and make a near-term contribution to reducing load-shedding.

1.3 HARNESSING OPPORTUNITIES REQUIRES AMENDMENTS TO THE CURRENT REGULATORY REGIME

South Africa's electricity supply industry currently functions as a vertically-integrated monopoly dominated by state-owned utility Eskom. The sector has been regulated by an independent regulator since 1995, first the National Electricity Regulator (NER) and since 2005 the National Energy Regulator of South Africa (NERSA).⁷

In terms of section 7 of the ERA NERSA controls electricity sector market access by issuing licences for the operation

of generation, transmission and distribution facilities, electricity imports, exports and trading.

South Africa's current market and regulatory design stems from a legacy techno-economic paradigm. It assumed that the cheapest power could be obtained through ever greater economies of scale in the form of large, centralised coal-fired power stations. This provided the imperative for very complex coal megaprojects exposed to large financial risks. A common national response to these risks in South Africa and other countries was the establishment of a regulatory framework to protect the monopoly of the centralised utility on the assumption that this would reduce financing costs for the uptake of megaprojects and lower the cost of power.

The new era of low-cost, decentralised renewable energy technologies has fundamentally disrupted this paradigm. Many countries are now undergoing deregulation and restructuring to facilitate private sector participation and competition within their generation sectors. In this context the rationale for rigid market access regulation disappears. Instead these become dysfunctional, shielding incumbents from competition and contributing to power shortages.

South Africa's electricity system is undergoing transformation through the separation of the generation, transmission and distribution businesses of Eskom, and the establishment of an Independent Transmission System and Market Operator (ITSMO) to introduce competition in generation. However, the roles and responsibilities of South Africa's Regulator still reflect a highly regulated monopoly regime.

South Africa's regulatory framework is not nimble enough to enable adequate numbers of investors to develop, least-cost renewable capacity to support security of supply. The country remains almost completely reliant on a deteriorating coal-based system and a centralised planning, approval and procurement system whilst residents, businesses and industries face large obstructions to generating their own power or supplying it to others.

⁷ NERSA replaced the National Electricity Regulator (NER) – amalgamating electricity, piped gas and petroleum industries. NER replaced the Electricity Control Board (ECB) in 1995.

Consistent delays in the processing of applications for a licence to generate electricity and obstructive criteria for new power generation opportunities to become eligible projects are the main market barriers to new entrants, stifling the creation of a competitive environment and barring opportunities to ease power constraints.

1.4 REGULATORY REFORMS ARE COMMON ACROSS THE WORLD

The reforms envisaged in this note are common globally.

In 2003 India delicensed generation projects completely (except for nuclear and hydro-power projects over a certain size), provided projects comply with technical standards related to connectivity to the grid. There are no restrictions on sale to different types of customers (India Ministry of Law and Justice, 2003).

Neither Australia nor Spain have market access restrictions, only strict technical compliance standards. In Australia, the rooftop solar PV industry is booming. This has meant evolving and strengthening technical standards enforced by the grid operator. Most generators are subject to a “dispatch-cap” (an agreement that the grid operator may curtail power from the project in the event of a power surplus) to ensure power system stability. This is a technical requirement that South Africa may need to consider in future, once power shortages have eased.

In Spain developers secure grid connectivity permits from the grid operator *Red Eléctrica*. Spain’s favourable regulatory environment has resulted in a ‘goldrush’ for these permits, with some developers securing and withholding them to trade on to others at a profit. Spain recently instated rules to ensure that permitted projects meet specific milestones to prevent delays due to the hoarding of valuable permits (Reuters, 2020). Creating an enabling regulatory regime has revealed the potentially lucrative nature of the renewable energy industry which, with balanced rules to ensure project delivery, presents enormous market opportunities.

Earlier this year Greece announced it would abolish its generation licence requirement which, due to slow processing, resulted in a 22-month backlog of applications. In its place the country introduced a vastly simplified online system to log project information and submit relevant approvals, issuing permits in much shorter processing times (Tagas, 2020).

The United Kingdom exempts all projects with capacity up to 50MW from licensing, with licensing exemptions available for projects up to 100MW on a case-by-case basis (UK DBEIS, 2017).

1.5 ENSURING TECHNICAL AND ENVIRONMENTAL COMPLIANCE

In South Africa, to ensure that new customer loads or generation projects do not affect system stability, generation facilities must comply with numerous technical standards, legislation and regulations which are dealt with *outside of the NERSA generation licence* process.

These include South African Grid Interconnection^{8,9} and Wiring¹⁰ Codes, specifications for the quality of power supply¹¹ and electricity metering practices.¹² Compliance with the relevant technical requirements are enforced by the grid operators. Furthermore, generation facilities must, in accordance with the relevant Municipal Electricity Supply By-law, obtain explicit consent in the form of a connection agreement with the relevant Municipal Electricity Distributor, or from Eskom if the generation facility is in Eskom’s area of supply.

Environmental compliance is dealt with through the Environmental Impact Assessment (EIA) regulations of 2014 (as amended).¹³

⁸ South African Renewable Power Plant Grid Code.

⁹ NRS 097 Parts 1 and 2: Grid Interconnection of Embedded Generation.

¹⁰ SANS 10142-1-2: Wiring Code (as amended and published).

¹¹ NRS 047: Electricity Supply: Quality of Service; and NRS 048: Electricity Supply: Quality of Supply.

¹² NRS 057 / SANS 474: Code of Practice for Electricity Metering.

¹³ Department of Environmental Affairs (2015). “EIA Guideline for Renewable Energy Projects.”

Table 2. Relevant environmental permits for the development of renewable energy infrastructure.

Project size	Environmental permit
< 10MW	No requirement
10-20MW ¹⁴	Basic Assessment as per EIA Regulations (2014). No requirement for solar photovoltaic installations if they are (i) in an urban area or (ii) on existing infrastructure.
> 20MW ¹⁵	Environmental Impact Assessment as per EIA Regulations (2014). No requirement for solar photovoltaic installations if they are (i) in an urban area or (ii) on existing infrastructure.

Developments are prohibited from proceeding until environmental authorisation is obtained from the relevant Environmental Authority. Expedited EIA processes may be applicable to projects if they are in a Renewable Energy Development Zone (REDZ).

The NERSA generation licence has no role in ensuring that projects are compliant with the necessary technical and environmental standards. Separate legislative instruments and associated processes guard against technical and environmental non-compliance.

1.6 POWER IS IN THE MINISTER’S HANDS

In terms of section 8 of the Electricity Regulation Act (4 of 2006) the Minister of the Department of Minerals and Energy may, after consultation with NERSA and stakeholders, determine by notice in the Government Gazette that any activity contemplated in section 7(1) need no longer be a licensed activity from the date set

out in such notice. This allows the minister to rapidly change the capacity threshold for projects that need a generation licence.

Drastically lifting the licensing requirement for new projects will immediately unleash the pent-up supply of many hundreds of projects and thousands of MW of capacity. Many of these can come online within a year and will continue to do so thereafter.

2 NERSA’S CURRENT MARKET ACCESS RULES

Figure 1 is a flowchart that demonstrates: 1) whether projects need to be licensed or registered by NERSA in terms of Schedule 2 of the ERA; and 2) whether NERSA will issue a licence based on evidence of compliance with the latest IRP, or based on a letter of consent to deviation from the IRP by the Minister. It also highlights key risks and uncertainties related to the process.

To be exempt from registration and licensing requirements a project must be smaller than 100kW, a ‘back up’ generator or completely off-grid.¹⁶ It is important to note that most commercial and industrial users are grid-connected for practical reasons (for example, to have access to back up power and grid services) and retaining customers on the grid is highly desirable from a public interest point of view to maintain electricity revenue streams and cross-subsidisation.

Currently, all grid-connected projects between 100kW and 1MW, as well as demonstration projects which will not be in operation for more than 36 months and co-generation projects¹⁷ must be registered with NERSA.

The registration requirements to be submitted are:

- A connection approval granted by the network service provider or distribution entity (Eskom, municipality or private distributor) which indicates that the project will connect to the national grid and that it complies with all the necessary technical standards and grid codes.

¹⁴ Listing Notice 1 of the EIA Regulations, promulgated under Government Notice R983 of 4 December 2014, as amended by Government Notice R327 of 7 April 2017.

¹⁵ Listing Notice 1 of the EIA Regulations, promulgated under Government Notice R983 of 4 December 2014, as amended by Government Notice R327 of 7 April 2017.

¹⁶ On 26 March 2020, amendments were made to Schedule 2 of the Electricity Regulation Act (4 of 2006) to exempt non-grid connected electricity generators from registering with or obtaining a generation licence from NERSA.

¹⁷ Electricity is produced from waste or the residual product of an underlying industrial process and supplied to a single or related customer.

- Consent by the distribution entity if the project is to supply a customer within the entity's supply area.
- A registration application form including information on the location, technology type, installed capacity, expected annual electricity output.
- A wheeling agreement¹⁸ with the grid operator should wheeling be involved.
- A supply agreement between a generation facility and a customer¹⁹ if they are to be supplied with electricity.

Currently, all grid-connected projects greater than 1MW must obtain a generation licence through NERSA's generation licence process. They do not qualify for the simpler process of registration.

In addition to the information for registration above, the generation licence application requires:

- Evidence of compliance with the latest Integrated Resource Plan (IRP), meaning the project must be catered for in the technology capacity allocations in Table 5 of the IRP. If the proposed project cannot demonstrate evidence of compliance with the latest IRP, a letter stating the reasons for deviation must be approved by the Minister of the Department of Minerals and Energy (DMRE) and submitted to NERSA for the licence application to be processed.
- The particulars of long-term arrangements with primary energy suppliers (mining house, colliery or other fuel supplier), maintenance programmes and decommissioning costs.
- Detailed financial information including annual forecasts for five years of costs, sales and revenues and project financing.
- A signed Power Purchase Agreement (PPA) showing the agreed tariff.
- Economic benefits of the project for the local community and South Africa's developmental objectives.
- Information on environmental permits.

2.1 KEY RISKS AND PROBLEMS WITH THE CURRENT REGULATORY PROCESS

- (1) (a) "Own use" / self-generation: Neither the Act nor the regulations contain a legal definition of generation for "own use". As such, all grid-connected projects which could be categorised as "own use" risk being deemed not so by NERSA and therefore bound to the same registration or licensing requirements as all other projects. There remains no economic rationale to restrict market access to "own use"/self-generation projects. This limitation excludes a large portion of potential distributed generation investments that could contribute directly to easing South Africa's power shortages and load shedding.

(b) The ERA contains no provisions for battery storage and hence procedures and approvals are ambiguous and subject to arbitrary change. NERSA appears to treat battery storage investments as generation options (subjecting them to the same registration and licensing complexities as other generation projects), instead of as technologies providing grid services which aid power system stability and should only need to demonstrate compliance with relevant technical standards and requirements by the grid operator.

- (2) Restrictions on electricity sale: The current version of Schedule 2 of the ERA (amended by regulation), specifies that licence-exempt projects between 100kW and 1MW can sell power to a "single" or "related"²⁰ customer only. No provisions are made for registered facilities to sell excess power back to distribution entities (including municipalities) or other third parties, effectively excluding an important source of additional power in the distribution network.

- (3) Slow processing of licensing applications: The issuance of generation licences is notoriously slow

¹⁸ "Wheeling" means conveyancing of electricity from the point of generation to a point of consumption through a third-party transmission or distribution network (Electricity Regulation Act 4 of 2006).

¹⁹ Registered projects are allowed to supply electricity to customers who are 'related to the generator or owner of the generation

facility' and/or supply to customers for consumption on the same property on which the generation facility is located.

²⁰ "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"

due to insufficient capacity at NERSA. Projects are often subjected to long delays beyond the 120 days requirement. A critical constraint being that the legislated timeframe of 120 days only starts once NERSA confirms that all documentation has been received. This creates an unintended loophole to delay the processing of licencing applications beyond the 120 day requirement. Only five generation licences for projects above 1MW have been approved by NERSA since 2016.²¹ This amounts to only an additional 25MW of new capacity – less than 0.1% of South Africa’s peak electricity demand.

(4) Demonstrating compliance with the IRP: It is unclear which generation projects demonstrate compliance with the country’s IRP (meaning they are provided for in the technology capacity allocations in Table 5 and this capacity has not yet been reached). There seems to be a provision for “Distributed generation” projects in the IRP (Table 5) under the capacity allocation: “Others (Distributed generation, CoGen, Biomass, Landfill)”, confirmed by the Minister’s address to parliament on 21 October 2020.²² In the subtext, these are defined as grid-connected projects to “...supply electricity to an end-use customer within the same property with the facility” implying that these projects produce electricity for onsite consumption only. Projects generating power off site with power wheeled through the grid, which is the segment with the greatest market potential, are not explicitly catered for. It is also unclear whether the capacity allocation might have been consumed by the 2000MW of emergency power procured under the same capacity allocation “Others” (DMRE, 2020a). Lack of clarity on the interpretation of IRP capacity allocations by NERSA – which has implications for which project generation licences can be processed without the need for Ministerial approval to deviate – is a source of significant market uncertainty.

(5) Gaining Ministerial approval for deviation from the IRP: Section 10(2)(g) of the ERA allows the Minister of Mineral Resources and Energy to grant deviations from the IRP if a project cannot demonstrate compliance as in point (4). If Ministerial approval for deviation is granted, licences can be processed by

NERSA even if generation projects are not catered for within the IRP new generation capacity allocation. As of 30 October 2020,²³ all grid-connected “self-generation” projects above 1MW supplying “single or related customers” (for on-site consumption or with power wheeled through the grid) have been granted Ministerial approval for deviation from the IRP (which implies that they were not originally catered for in the IRP). NERSA can now process such licence applications. This is a useful step forward in reducing risk for “self-generation” projects, as the process for obtaining a Ministerial deviation letter has been unclear with little evidence of such approvals being processed. However, for no apparent reason, other grid-connected distributed generation projects (i.e. not “own use” / self-generation projects) still face the hurdle of obtaining Ministerial approval before being able to apply for a licence. This requirement does not serve the public interest in the context of South Africa’s urgent electricity supply shortage. There is no explicit legal prohibition on generation facilities greater than 1MW selling electricity to distributors or to multiple customers who are unrelated (third parties). However, given point (4), these projects would not be able to take advantage of any IRP capacity allocation, and are also not included in the recent Ministerial approval for deviation. They will need to apply for Ministerial approval before NERSA can issue a licence. Such approvals are supposedly granted on a case-by-case basis, but there is still much uncertainty surrounding this.

Overall significant regulatory uncertainties and slow processing of ministerial exemptions and licence applications have actively discouraged new entrants from investing in developing power projects.

In the context of a power crisis, South Africa should, following international precedent, look toward regulatory reforms to enable the quickest possible options to address supply gaps in a safe and affordable manner.

²¹ <https://nersa.org.za/licences/>

²² <https://www.gov.za/speeches/address-mineral-resources-and-energy-minister-mr-samson-gwede-mantashe-mp-joint-sitting>

²³ NERSA Media Statement: “Licensing of generation facilities above 1MW” Available: <http://nersa.org.za/wp-content/uploads/2020/11/Media-Statement-Public-hearings-on-the-three-Eskom-RCAs.pdf>

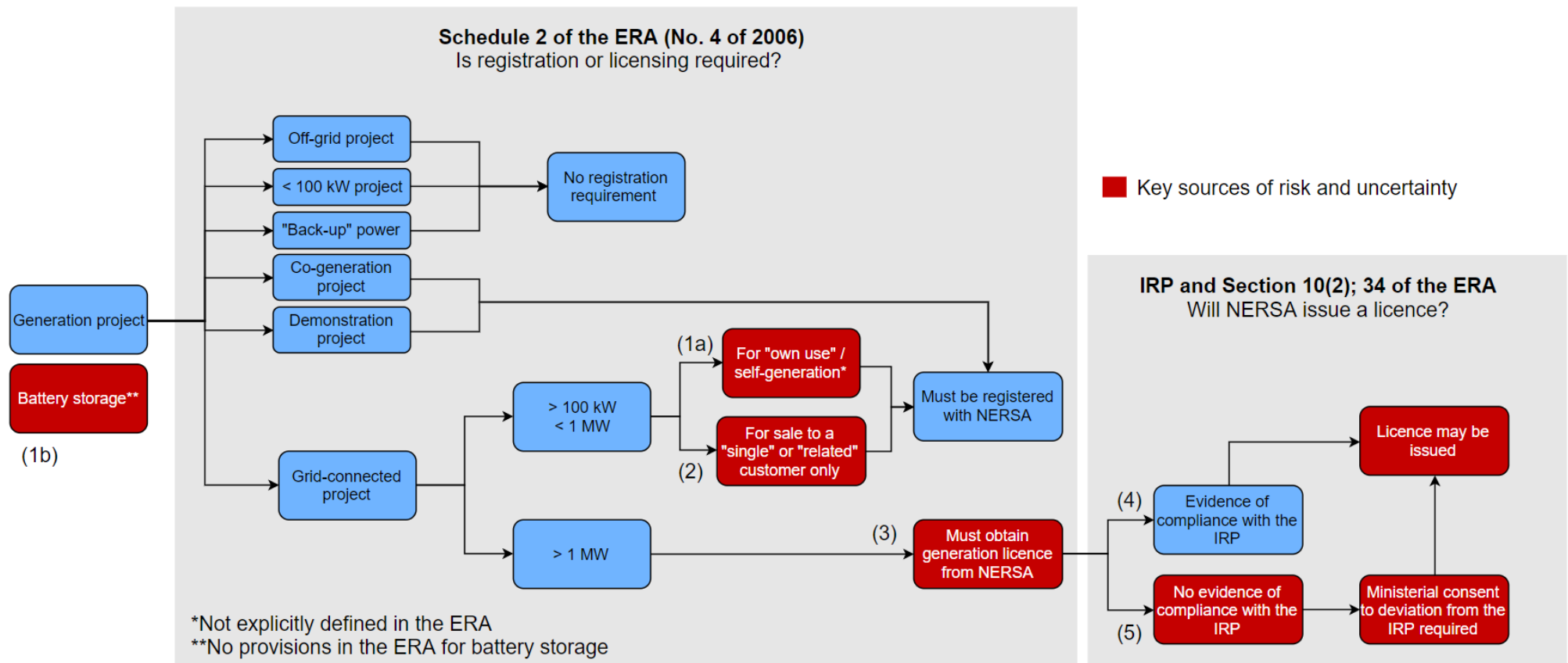


Figure 1. Current market access rules and regulatory framework

3 PROPOSED REGULATORY REFORMS

Figure 2 demonstrates a reconfiguration of the current system including proposed regulatory reforms and new licensing and registration requirements to reduce risks and uncertainties and enable faster uptake of additional generation capacity. These include:

(1) (a) Define “own-use” in the ERA as any project where the electricity off-taker has an equity stake in the generation facility, irrespective of whether the electricity is used on the same site as the generation facility, or whether the electricity is wheeled through the grid. Exempt all “own use” projects from obtaining a generation licence regardless of size, even if grid connected. They should instead be subject to a simplified registration process, see point (3) below. All environmental, technical and grid connection approval requirements remain. These reforms will substantially reduce the financing risk, and thus cost of these projects, allowing them to be located off-site at appropriate locations, with the power wheeled over the grid (providing income for Eskom / future ITSMO). It will also allow multiple users to share the costs of generation for “own use”, realising economies of scale and lowering costs.

(b) Exempt all battery storage projects from market access registration or licensing requirements on the basis that battery storage is a technology providing grid services rather than a generation option, and thus should only need to demonstrate compliance with the necessary technical standards and requirements of the grid operator.

(2) Lift the generation licence exemption threshold for all other grid-connected projects from 1MW to at least 50MW, irrespective of whether these projects:

- Supply electricity to a single or related customer with or without wheeling of that electricity
- Sell electricity to multiple unrelated customers (third parties) with or without wheeling of that electricity, or to an electricity trader
- Sell excess electricity to a distribution entity (generators in areas supplied by electricity distributors should be allowed to be net producers of electricity and compensated at a tariff that reflects the economic value of that supply).

(3) Simplify and fast track the registration of licence-exempt projects between 100kW and 50MW by setting up an appropriate online portal to process registrations: Registration should serve as a process to upload and record project information, supply agreements and grid connection approvals (which are obligatory for all electrical installations and are obtained independently from the relevant network service provider – generally Eskom or the municipal distribution entity). The registration system should provide transparency on what projects are being implemented and where, and an understanding of the distributed generation market size, but should not be subject to NERSA approval.

(4) For all projects greater than 50MW, establish an efficient online process to submit relevant documents and approvals for generation licence applications. The information required in the current generation licence application is geared to large mega projects (especially coal-based projects) with complex contractual and fuel-supply agreements. There is a need to simplify and update the submission documents and approvals to be more relevant to distributed generation projects which are often smaller, without complex contractual arrangements or major future decommissioning costs and can be installed quickly utilising space which would not have been used otherwise (for example, a 10MW rooftop solar PV project on a shopping mall vs a 750MW coal plant spanning a large area with major environmental impacts and coal purchase contracts from a coal mine). This will streamline the processing of licence applications.

(5) Require NERSA to publish all licences issued on their website and to add any new applications received (whether compliant or not) within a week of receipt, updating the status of these as received, in process, awarded or refused and providing reasons for refusal.

These proposed reforms only pertain to easing the requirements for market access by NERSA. We do not propose any changes to the environmental permitting, technical standards and grid connection approvals required for grid-connected projects.

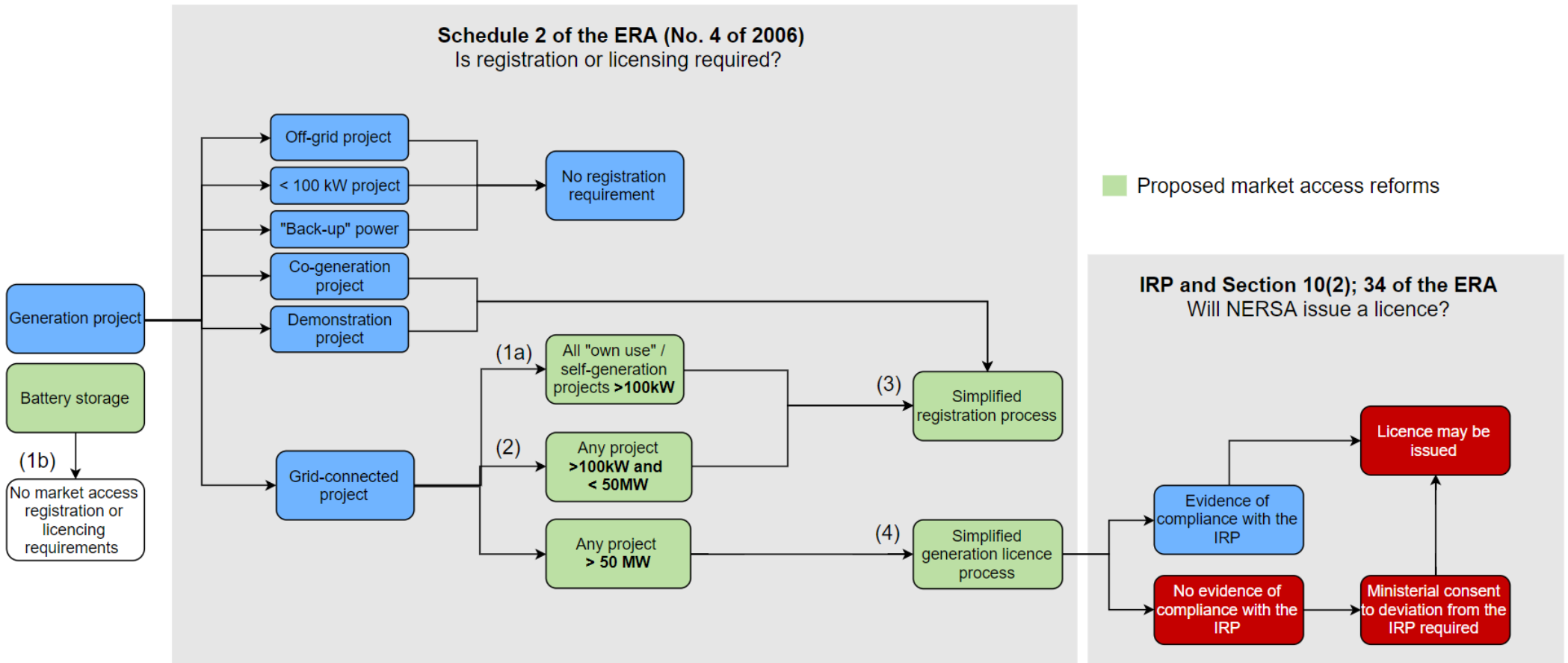


Figure 2. Proposed new market access rules and regulatory reforms

4 WILL DEREGULATION AFFECT ESKOM AND MUNICIPALITIES?

It is important to point out that these licensing reforms are unlikely to negatively affect Eskom, municipalities and the sovereign finances, but for a combination of reasons will *strengthen* their position:

- These reforms and associated interventions will reduce load shedding and power shortages. This will increase market sentiment and investor confidence in the economy, resulting in new investments that increase demand for power, in turn boosting Eskom and municipal revenues (irrespective of whether they sell the new power or not – wheeling tariffs still apply).
- By adjusting tariff structures distributors can ensure that all network and power system service costs that grid-connected distributed generation projects benefit from can be recovered.
- New projects will supply power that Eskom cannot supply; Eskom will therefore not incur financial losses for this portion of the new power.
- New projects will enable Eskom to reduce the use of its diesel-fired peaker plant which produces electricity at a much higher cost than Eskom can sell it for. Eskom will thus realise a net saving in this case.
- New projects will enable Eskom to reduce the use of its most expensive coal suppliers realising a net saving.
- Eskom will be able to increase utilisation of the combined 2700MW of pumped storage capacity which is presently underutilised – leading to savings in diesel burn and expensive coal while reducing load shedding.²⁴
- An integrated approach where private generation augments Eskom’s supply will reduce grid-defection, maintain revenue contributions to common grid and system costs, and thus slow or reverse the “utility death spiral” threatening Eskom.
- Third-party generation and off-take avoids encumbering the balance sheets of Eskom, municipalities or the sovereign with the contingent liability associated with power procurement agreements. This frees up financial capacity to address urgent developmental needs.

Restricting competition and maintaining the monopoly position of incumbents can be no justification for the

continued large economic cost of power shortages and negative investor sentiment and job losses which results from the current system.

Even if there was to be a negative financial impact it would still be much better for South Africa to pursue these reforms and associated benefits, and socialise the already sunk costs of legacy power systems, rather than remaining locked into our current unsustainable power sector trajectory.

Despite the lack of an enabling policy framework, more and more municipalities have responded to the increase in small solar-based systems by residents within their jurisdictions. The South African Local Government Association and the Association of Municipal Electricity Undertakings are working to build capacity in municipalities to create appropriate mechanisms to allow small-scale embedded generation (SSEG) uptake (less than or equal to 1MW). Their efforts should be strengthened. As of September 2020, 29 municipalities had aspects or components of an SSEG tariff structure in place to strike a balance between protecting municipal revenue and ensuring a viable business case for SSEG customers (ESI, 2020; Mohamed Weideman, 2020).

5 CONCLUSION

Far from aiding South Africa’s need for reliable electricity supply, the current regulatory regime in effect obstructs it. This view is widely supported by South African energy firms who are gearing up to respond to the crisis but are dissuaded by onerous red tape.

No comparable economic sector in South Africa requires such market access licensing, and international experience strongly supports the proposed reforms.

In the context of our country’s power crisis, licensing reforms are urgently needed to unlock own-use and distributed generation projects that can be commissioned swiftly, ease power constraints and mitigate load-shedding, and chart a pathway towards a more reliable, sustainable and adaptive electricity system.

²⁴ Mallinson, 2020. Alternative Mitigation Plans webinar. Available: https://www.youtube.com/watch?v=gazqn470z8U&feature=emb_logo

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