GUIDE TO CONNECTION OF SMALL SCALE EMBEDDED GENERATION TO A MUNICIPAL DISTRIBUTION SYSTEM: ELECTRICITY SUPPLY BY-LAW AND POLICY REQUIREMENTS

Prepared by Cliffe Dekker Hofmeyr Inc. as part of a legal framework review applicable to Small Scale Embedded Generation undertaken for Sustainable Energy Africa as a part of the SAGEN Programme. For the overarching *Legal Report: Municipal Legal Framework Applicable to Small Scale Embedded Generation* visit **www.cityenergy.org.za** or **www.sseg.org.za**.

Acknowledgement: The by-law text in this document draws extensively on the GreenCape by-law guidelines document.

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INTRODUCTION

The purpose of this document is to serve as a guide for municipalities to effectively administer the connection of embedded generation systems to the municipal distribution system.

DISCLAIMER

The information contained in this document is for information purposes only. The opinions expressed are in good faith and while every care has been taken in preparing this document, the authors make no representations and give no warranties of whatever nature in respect of these documents, including but not limited to the accuracy or completeness of any information, facts and/or opinions contained therein. The authors, its subsidiaries, the directors, employees and agents cannot be held liable for the use of and reliance on the opinions, estimates, forecasts and findings in these documents. It is recommended that legal advice is sought in respect of any drafting of by-laws and policies.

APPLICATION OF THE GUIDE

This guide applies to municipalities that have the executive authority to administer the reticulation of electricity in their area of jurisdiction. District municipalities have inherent executive constitutional authority[1] over the reticulation of electricity and associated services within its jurisdiction unless a local municipality has been authorised by the Minister of Energy pursuant to a notice issued in the Government Gazette[2].

DEFINITIONS

For purposes of this manual, the following definitions shall apply (and cognate expressions shall have similar meanings) —

embedded generation systems	electrical power generation units connected directly to the distribution system or connected to the distribution system on the customer side of the meter
ERA	Electricity Regulation Act, No 4 of 2006
municipality	a municipality that has executive authority to perform electrical reticulation services in its area of jurisdiction
NERSA	the National Energy Regulator of South Africa

[1] Section 83 of the Municipal Structures Act, No. 117 of 1998 read together with sections 156 and 229 of the Constitution of the Republic of South Africa, 1996

[2] Section 84(3) of the Municipal Structures Act, No. 117 of 1998

reticulation	The trading or distribution of electricity and includes services associated therewith
SSEG	power generation of less than 100kVA (1MVA)

SHOULD A MUNICIPALITY HAVE BOTH A BY-LAW AND A POLICY?

Municipalities have a duty to make by-laws and policies to effectively administer their electricity reticulation function[3]. The electricity reticulation function extends to providing open and non-discriminatory access to the municipal distribution system and to permit the connection of embedded generation systems.

It is recommended that municipalities adopt a by-law and a guideline policy to effectively administer the connection of embedded generation to the municipal distribution system requirements and application process for connecting all forms of embedded generation.

The purpose of the policy is to provide guidelines to be followed by customers in making application to the municipality for connection of an embedded generation system to the municipal distribution system. However, the policy itself cannot impose the same legal obligations on the customers as created by by-laws. Therefore, the policy should be regulated and enforced through a by-law, being the instrument used by mandated municipalities to exercise their legislative authority over electricity services.

POLICY GUIDELINES FOR CONNECTON OF EMBEDDED GENERATION SYSTEMS

Municipalities should develop policies relating to the connection of embedded generation systems to the distribution system, which policy should provide the application procedure and information requirements of the municipality from the customer to affect an appropriate connection.

This policy is likely to cover the connection of SSEG and would not be applicable to any embedded generation above 1MVA or any connection to the distribution system owned and operated by Eskom Holdings SOC Limited.

It is recommended that the application process and minimum requirements are included in the policy as opposed to the by-law as this allows the municipality greater flexibility to amend its administrative application process from time to time.

The following minimum requirements should be set out in the policy -

- **Connection Application Process.** The process to be followed when applying for connection as well as related timeframes which follow the application. The customer must submit a completed and signed application form for connection. Upon receipt of the application for connection to the distribution system, the municipality must advise whether the applicant can be connected to the existing system and/or what technical improvements are required to enable the new connection.[4] The application form process should specify a timeframe for advising the applicant so as to avoid unnecessary administrative delays by either party.

- **Technical Data Provided**. Information requirements of the municipality from the customer to effect an appropriate connection i.e. customer details; capacity, location and technology of the embedded generation system.

- **Compliance with Law.** Requirements on the customer to either (a) hold a generation licence or (b) provide proof that the customer has registered the embedded generation system with NERSA (when this system is in place) and is exempt from having to hold a generation licence in terms of Schedule 2 to the ERA.

[3] Municipal Structures Act, No. 117 of 1998

[4] Distribution Code as published by NERSA from time to time

- **Contractual Agreement.** A connection agreement entered into between the licensed distributor and the customer as required in terms of the Distribution Code[5]. The technical information provided as part of the application for connection should be included as annexures to the connection agreement. It is possible for a connection agreement to be drafted as standard terms and conditions attached to the application form. The customer can accept the terms and conditions upon submission of the application and/or payment of the connection fee.

- **Application/Connection Fee**. Payment of the connection fee following which the customer shall be deemed to have accepted the terms and conditions governing the connection of the embedded generation system to the municipal distribution system.

- **Technical Standards.** The policy should require compliance with the technical and safety standards set out in the South African Grid Code and the Distribution Codes published by NERSA and any other legislation or regulations and any technical requirements which are particular to the distribution system of the municipality.

- **Certificate of Compliance**. The customer must submit a certificate of compliance in terms of the Electrical Installation Regulations issued by a registered person in terms of the Regulations made in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) certifying that the installation and all the installed equipment comply with the national and international regulations and legislation. SANS10142-1 will apply until such time as the SANS10142-1-2 is issued. This is required in terms of law.

For further information and detail on what requirements should be included in the policy governing the connection of embedded generation to the municipal distribution system, please refer to the document entitled *"Requirements for Small-Scale Embedded Generation: Conditions and application process to become a solar PV embedded generator in the Municipality of [insert]", the latest version of which is part of the AMEU SSEG Resource Pack and available at* ***www.cityenergy.org.za*** *and* ***www.sseg.org.za***

ELECTRICITY SUPPLY BY-LAWS

Overview

A municipality's policy on the connection of embedded generation systems to the municipal distribution system must be regulated and enforced through a by-law. The existing electricity supply by-law adopted by a municipality should be amended to make provision for, at a minimum, the following to ensure effective administration and enforcement by the municipality –

- **Institutional Mandate.** The functions administered by the municipality pursuant to the by-law, namely electricity reticulation services which must include regulating the connection of an embedded generation system to the distribution system.

- **Appropriate Delegation.** The delegation of powers and duties and state that the municipality may delegate any power or duty that has been conferred on the municipality to consider and approve or reject applications for connection to the municipality's distribution system in terms of the by-law to a suitably qualified official, agent or service providers of the municipality.

- **Compliance with Policy.** Compliance by any customer with any policy issued by the municipality pursuant to the municipal by-law relating to the connection and installation of embedded generation systems.

- **Approval.** The embedded generation system cannot be connected to any installation or the distribution system without the prior written approval of the municipality.

- **Electrical Interconnection Requirements.** The embedded generation system must comply with technical standards.

[5] Distribution Code as published by NERSA from time to time

- **Legal Sanctions**. The legal recourse in the event that the customer fails to comply with the by-laws and requirements to connect the embedded generation system to the distribution system.

- **Compliance with national and provincial legislation**. The by-law must comply with national and provincial legislation and enforce and licensing or registration requirements for the generation and supply of electricity pursuant to the terms of the ERA.

Where a municipality has appointed a service provider to perform reticulation services on its behalf[6], including any municipal entity, another municipality, another government entity or a private company[7] the by-laws serve as the conditions for the provision of the electricity services by the service provider and must be referred to in the service level agreement entered into between the municipality and the services provider.

Set out below are examples of provisions recommended to be included in the electricity supply by-laws to regulate the connection of embedded generation systems to the municipal distribution system. Regard must be had to the terminology contained in the relevant electricity supply by-law and adapted accordingly.

Institutional Mandate and Electricity Services

The by-law should establish the functions administered by the municipality pursuant to the by-law, namely electricity reticulation services which also includes the regulation of the connection of an embedded generation system to the municipality's distribution system.

Recommended by-law text :

Provision of electricity services

1. Subject to subsection 2 below, only the Municipality may supply or contract for the supply of bulk electricity within its jurisdictional area.

2. The Municipality may permit the bulk supply or retail wheeling of electricity through its electrical grid by another electricity supplier which is licensed to supply electricity in terms of the Electricity Regulation Act.

3. The Municipality may permit the connection of an embedded generation system to its electrical grid in accordance with the requirements of this by-law and subject to:

3.1 Compliance with the relevant requirements of the Municipality pertaining to the generation of electricity and the safety thereof contained in any guideline or policy issued by the Municipality in respect thereof.

3.2 Registration with the Municipality of all fixed electrical installations where electricity is generated and compliance with the Municipality's safety and quality requirements contained in any guideline or policy issued by the Municipality in respect thereof.

Approval for Connection

The by-law should regulate the connection of embedded generation systems to the municipal distribution system and enforce the licensing or registration of any and all embedded generation systems within the municipal boundary in accordance with the requirements of the ERA.

Recommended by-law text :

Connection of electrical generation equipment

1. No person shall directly or indirectly connect, attempt to connect or cause or permit to be connected any electrical installation or part thereof to the Municipality's supply mains or service connection except with written permission of the [Director].

[6] Section 12 of the Municipal Structures Act, No. 117 of 1998

[7] Section 76(b) of the Municipal Structures Act, No. 117 of 1998

2. *No alternate electrical generation equipment provided by a customer for his own operational requirements or for the generation of electricity may be connected to any installations without the prior written consent of the Municipality.*

3. *Application for such consent in terms of subsections (1) and (2) above must be made in writing and must include a full specification of the electrical generation equipment and a wiring diagram, as may be further detailed in any guideline or policy issued by the Municipality in respect thereof.*

4. *The electrical generation equipment must be so designed and installed that it is impossible for the Municipality's supply mains to be energised by means of a back feed from such electrical generation equipment when the Municipality's supply has been de-energised.*

5. *The customer shall be responsible for providing and installing all such protective equipment and for obtaining a certificate of compliance issued in terms of the Regulations made in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).*

6. *The Municipality shall not be held responsible for any work done by the electrical contractor/registered person on a customer's premises and shall not in any way be responsible for any loss or damage which may be occasioned by fire or by any accident arising from the state of the wiring on the premises or the connection of the electrical generation equipment.*

7. *Where the customer's alternate electrical generation equipment is permitted to be electrically coupled to, and run in parallel with the Municipality's supply mains, the customer shall be responsible for providing, installing and maintaining all the necessary synchronising and protective equipment, to the satisfaction of the [Director].*

8. *Before making any alteration or addition to any electrical generation equipment installed within the area of the supply that requires an increase in electricity supply capacity, or an alteration to the service, the customer shall give notice of his intentions in accordance with the Regulations made in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).*

9. *Any electrical generation equipment connected or to be connected to the supply mains, and any additions or alterations thereto which may be made from time to time, shall be provided and erected and maintained and kept in good order by the customer at his own expense and in accordance with this by-law and the Regulations made in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).*

Wheeling

In terms of the ERA, generators are entitled to wheel electricity generated by an embedded generation system through the municipal distribution system. The by-law should regulate the wheeling[8] of the electricity generated by an embedded generation system within the municipal electrical grid.

Recommended by-law text:

Wheeling of electricity

1. *No person may generate electricity by way of a fixed electrical installation and feed into the municipal electricity distribution network unless an agreement has been concluded with the Municipality, and such agreement together with the provisions of this by-law, as well as any other legislation governing the licensing of generators, shall govern such generation of electricity.*

Principles for the resale of electricity

The embedded generation system may be installed on commercial buildings and the electricity generated by the embedded generation system could be resold to other persons occupying the premises. The by-law should establish principles for the resale of electricity in line with the provisions of the ERA.

Recommended by-law text: Resale of Electricity

[8] The transportation of electric power over transmission lines from where it is generated to where it is consumed.

1. *Unless authorised by the [Director], no person may sell or supply electricity supplied to his or her premises or generated by him or her under an agreement with the Municipality, to any other person or persons for use on any other premises or permit or allow such resale or supply to take place.*
2. *If electricity is resold for use on the same premises, the provisions of the Electricity Regulation Act, No 4 of 2006 shall apply, as specified in Schedule 2 to the Electricity Regulation Act, No 4 of 2006.*
3. *If electricity is resold for use upon the same premises, the electricity resold shall be measured by a submeter of a type which has been approved by the South African Bureau of Standards and supplied, installed and programmed in accordance with the standards of the Service Provider.*
4. *The tariff, rates and charges at which and the conditions of sale under which electricity is thus resold shall not be less favourable to the purchaser than those that would have been payable and applicable had the purchaser been supplied directly with electricity by the Service Provider.*
5. *Every reseller shall furnish the purchaser with monthly accounts that are at least as detailed as the relevant billing information details provided by the Service Provider to its electricity consumers.*

Standby Supply

The by-law should regulate the obligation of the municipality to ensure standby supply of electricity in the event that the embedded generation system is unable to supply electricity to the customer. In this instance, an amendment to the existing electricity supply agreement entered into between the customer and the municipality will be required to be entered into.

Recommended by-law text*: Standby Supply*

1. *Standby supply of electricity for any premises having a separate source of electricity supply may only be supplied with the written consent of the Municipality.*
2. *Upon interruption of the electricity supply the Municipality may supply standby electricity in any manner as necessary.*

Metering

The by-law should regulate the metering of the embedded generation system connected to the municipal distribution system.

Recommended by-law text:

The Municipality shall, at the customer's cost in the form of a direct charge or prescribed tariff, provide, install and maintain appropriately rated metering equipment at the point of metering for measuring the electricity supplied.

Norms, standards and guidelines

The by-law should empower the municipality to determine and publish norms, standards and guidelines relevant to embedded generation within the municipal boundaries.

Recommended by-law text*:*

1. *The Municipality may from time to time issue Technical Standards detailing the requirements of the Municipality regarding matters not specifically covered in this by-law but which are necessary for the safe, efficient operation and management of the electrical generation equipment.*
2. *The Municipality may determine and publish norms, standards and guidelines which prescribe appropriate measures to save energy or to reduce the use of electricity and such norms standards and guidelines must be kept in the form of an operational manual.*
3. *The norms, standards and guidelines contemplated in subsection (1) may differentiate between communities, geographical areas and different kinds of premises.*

Right to disconnect embedded generation system

In terms of the ERA, a licensed distributor is required to to disconnect any embedded generation system that that does not comply with the law. In compliance with national legislation and in addition to provisions governing the right of the municipality to disconnect the supply of electricity to a customer, the by-law should also permit the municipality to disconnect the embedded generation system to the extent that the customer has not complied with the by-law and/or conditions of connection (either before or after their electricity meter).

Recommended by-law text*: Unauthorised connections*

1. *No person other than a person whom the Municipality specifically authorises in writing to do so may directly or indirectly connect, attempt to connect or cause or permit the connection of a new electrical installation or part of a new electrical installation to the supply mains or service connection.*
2. *In the case where an electrical installation has been illegally connected on a customer's premises in contravention of this by-law, any policy or guideline issued by the Municipality and/or the Regulations, the Municipality may disconnect the connection of the electrical installation to the municipal distribution network.*
3. *The Municipality must give a person referred to in subsection (3) and any person residing in the premises notice of —*
   a) *the intention to disconnect the electrical installation of such person;*
   b) *a reasonable opportunity for such person to make representations in respect of the intended disconnection; and*
   c) *all the relevant information including reasons for the intended disconnection and the notice period on or after which the disconnection will be effected.*
4. *For circumstances other than listed in sub-section (5), where any of the provisions of this by-law or the Regulations are being contravened, the Municipality shall give the person concerned fourteen days' notice to remedy his or her default prior to disconnection.*
5. *The Municipality may disconnect the supply of electricity to any premises or the connection of any electrical installation without notice under the following circumstances;*
   a) *where there is a case of grave risk to any person or property; or*
   b) *for reasons of community safety or the safety of emergency personnel.*
6. *After the disconnection contemplated in subsection (1), the fee as prescribed by the Municipality for such disconnection or the reconnection of the service shall be paid by the person concerned.*
7. *In the case where an installation has been illegally reconnected on a customer's premises after having been previously legally disconnected by the Municipality, or in the case where the Municipality's electrical equipment has been tampered with to prevent the full registration of consumption by the meter, the electricity supply may be physically removed from those premises.*