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Ref No.:
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Dear Mr Marais

COST ESTIMATE LETTER FOR THE CONSTRUCTION OF WORKS TO CONNECT A GENERATOR TO THE DISTRIBUTION SYSTEM FOR DWARSRUG WIND FARM LOCATED IN LOERIESFONTEIN, NORTHERN CAPE PROVINCE

Thank you for your application relating to the construction of works to Connect the Facility to the Distribution System, and/or the possible impact on the Distribution System of Connecting the Facility that is embedded within a plant, attached hereto as Annexure B (*Connection Application*). Eskom has assessed your requirements and herewith provides an estimate of the cost of providing the works and the Connection. It is based on engineering assumptions and provided in order to assist in making a decision whether or not you should proceed to request a Budget Quote.

This Cost Estimate Letter is not an offer for a contract. It is purely illustrative and in anticipation of a request for a Budget Quote. No information contained in this Cost Estimate Letter shall be deemed to form part of any contract between Eskom and the Customer.

Furthermore, if based on this Cost Estimate Letter a Request for Budget Quote is submitted to Eskom, any information recorded in this Cost Estimate Letter will lapse immediately (even if a Budget Quote is eventually not provided or accepted) and Eskom will not be bound to perform in terms of this Cost Estimate Letter in any way.

The provision of a Budget Quote related to any portion of the Eskom related cost not covered through the Connection Charge, is subject to such funding being included in Eskom's budget and approval for the investment being obtained through Eskom's governance processes.

Eskom will require certain documents and approvals, set out herein, and payment of a Distribution Quotation Fee and if applicable a Transmission Quotation Fee, in order to provide a Budget Quote.

1. DEFINITIONS AND INTERPRETATION

- 1.1 Notwithstanding that this Clause 1 deals with interpretation, where any sub-clauses hereof contain operative provisions, effect shall be given thereto as set out herein.
- 1.2 The following capitalised words and expressions shall have the meanings as assigned to them and cognate expressions shall have corresponding meanings:
 - 1.2.1 **'Act'** means the Electricity Regulation Act of 2006, including any regulations issued pursuant thereto, as amended or re-enacted from time to time.
 - 1.2.2 **'Approved Credit Rating'** means a long-term unsecured foreign currency debt rating no worse than 'BBB-' (as determined by Standard and Poor's Rating Group or Fitch Ratings) or 'Baa3' (as determined by Moody's Investor Services, Inc) South African Long-term National Scale Rating no worse than 'zaA-' (as determined by Standard & Poor's) or 'A-(zaf)' (as determined by Fitch Ratings) or 'A3.za' (as determined by Moody's Investor Services, Inc) or equivalent rating (as determined by Eskom or a rating agency approved

- by Eskom).
- 1.2.3 **'Budget Quote'** means the budget quote, with its appendices, to be issued by Eskom to the Customer;
 - 1.2.4 **'Business Day'** means any day other than Saturday, Sunday or an official public holiday in South Africa.
 - 1.2.5 **'Capital Costs'** means the total actual capital costs of the Eskom Works but excluding the Monopoly Works Cost;
 - 1.2.6 **'Code(s)'** means the Distribution Code, the South African Grid Code, the Grid Connection code for Renewable Power Plants or any other code, published by NERSA, as applicable to Eskom and/or the Customer;
 - 1.2.7 **'Connection'** means the physical connection of the Facility to the Distribution System;
 - 1.2.8 **'Connection Charge'** means, subject to adjustment, the total Standard Connection Charge and the Premium Connection Charge recouped or to be recouped by ESKOM from the CUSTOMER for the cost of the Eskom Works comprising the Dedicated Capital Costs, and if applicable, the Monopoly Works Cost, calculated in compliance with the Code(s);
 - 1.2.9 **'Connection Charge Estimate'** means the total estimated Connection Charge as set out in Table 1 of Annexure G (Financial Specifications).
 - 1.2.10 **'Connection Charge Guarantee'** means a Guarantee issued for an amount equal to the Connection Charge Guarantee Amount which amount will be set out in the Budget Quote.
 - 1.2.11 **'Connection Charge Guarantee Amount'** means (a) initially, an amount equal to the balance of the Connection Charge Estimate as set out in Table 1 of Annexure G (Financial Specifications), and (b) thereafter, the amount in paragraph (a) adjusted by reference to (i) deductions for any instalments received by Eskom in the preceding year pursuant to the Budget Quote and (ii) deductions or additions resulting from any adjustments made by Eskom pursuant to the Budget Quote in the preceding year.
 - 1.2.12 **'Connection Charge Payment Schedule'** means the schedule of Connection Charge instalments and corresponding instalment payment dates to be set out in the Budget Quote, as amended by Eskom from time to time on written notice to the Customer pursuant to the Budget Quote.
 - 1.2.13 **'Connection Site'** means the site made or to be made available by the Customer to Eskom for the Eskom Connection Works.
 - 1.2.14 **'Connection Works'** means the planning, financing, insuring, land rights acquisition, design, engineering, procurement, supply, fabrication, construction, erecting, installation, inspection, pre-commissioning, testing, completion, commissioning, operating and maintenance of the electricity network infrastructure comprised in the Connection and all activities and requirements ancillary to these, and includes the Facility Connection Works and the Eskom Connection Works;
 - 1.2.15 **'Contract Works'** means the portion of the Connection to be undertaken by the Customer in accordance with the conditions of the Self-Build Agreement to be concluded between the Customer and Eskom;
 - 1.2.16 **'Contract Works Equipment'** means the plant, facilities, equipment and assets, which together comprises the portion of the Connection to be supplied by the Customer in accordance with the conditions of the Self-Build Agreement to be concluded between the Customer and Eskom. The Contract Works Equipment shall include any and all machinery, apparatus and materials that would ordinarily form part of a Network, such as telecommunication equipment, even if such machinery, apparatus or material may be removed without materially affecting the operation or reliability of the Network.
 - 1.2.17 **'Contract Works Security'** means a Guarantee issued in favour of Eskom for an amount equal to 10% (ten percent) of the estimated value of the Contract Works;

- 1.2.18 **'Cost Estimate Fee'** means the portion of the Connection Charge paid by the Customer and received by Eskom for the issue of the Cost Estimate Letter, the value of which is set out in Part A of Annexure G (Financial Specifications);
- 1.2.19 **'Cost Estimate Letter'** means this letter, with its annexures, issued by Eskom to the Customer with a non-binding estimation of the costs of the works to Connect the Facility to the Distribution System;
- 1.2.20 **'Customer'** means the legal person or entity as set out in Annexures B (Connection Application) and C (Customer/Technical Details and Description of Facility);
- 1.2.21 **'Dedicated Capital Costs'** means the actual capital costs of the Eskom Works but excluding the cost of the Monopoly Works and Upstream Works;
- 1.2.22 **'Dedicated Connection Equipment'** means those assets forming part of the Eskom Equipment recovered through the Connection Charge associated with the Dedicated Capital Costs;
- 1.2.23 **'Distribution'** means the regulated business unit through which Eskom constructs, owns, operates and maintains Eskom's Distribution System in accordance with its Licence and the Code(s).
- 1.2.24 **'Distribution Code'** means the set of documents titled South African Distribution Code published by NERSA, as amended, modified, extended, replaced or re-enacted from time to time.
- 1.2.25 **'Distribution Connection and Use-of-System Agreement' or 'DCUOSA'** means the agreement(s) required by the Code, to be entered into, in writing, between Eskom and the Customer in respect of the Connection of the Facility to the Distribution System and to allow the Customer access to and the use of the Distribution System.
- 1.2.26 **'Distribution Connection Charge'** means that portion of the Connection Charge associated with the Distribution System, which may comprise of a Distribution Standard Connection Charge and a Distribution Premium Connection Charge;
- 1.2.27 **'Distribution Monopoly Works'** means those Monopoly Works associated with the Distribution System;
- 1.2.28 **'Distribution Premium Connection Charge'** means that portion of the Connection Charge associated with a Premium Connection and the Distribution System;
- 1.2.29 **'Distribution Quotation Fee'** means the portion of the Distribution Connection Charge to be paid by the Customer to Eskom for the issue of the Budget Quote, the value of which is set out in Annexure G (Financial Specifications) and will be valid for a period of 12 months from the date of this Cost Estimate Letter, where after the value will be revised by Eskom;
- 1.2.30 **'Distribution Standard Connection Charge'** means that portion of the Connection Charge associated with a Standard Connection and the Distribution System;
- 1.2.31 **'Distribution System'** means Eskom's network infrastructure consisting of assets operating at a nominal voltage of 132 kV or less, not classified as transmission transformation equipment;
- 1.2.32 **'Distribution Use-of-System (DuoS) Charge'** has the meaning as ascribed to it in the Schedule of Standard Prices;
- 1.2.33 **'DUoS Charge (generators)'** has the meaning as ascribed to it in the Use of System Schedule of Standard Prices for Distribution Connected Generators (Urban/Rural);
- 1.2.34 **'EA'** means environmental authorisation(s);
- 1.2.35 **'Early Termination Guarantee'** means a Guarantee issued for an amount equal to the Early Termination Guarantee Amount in terms of clause 4.4;
- 1.2.36 **'Early Termination Guarantee Amount'** means a) initially an amount as set out in

Annexure G (Financial Specifications), b) thereafter an amount as adjusted by Eskom on written notice to the Customer in accordance with the terms and conditions of Budget Quote; and c) thereafter such adjusted amount reduced annually by one tenth (1/10th) with effect from the fourth (4th) year following Eskom's operational notification in terms of the DCUOSA;

- 1.2.37 **'Eskom'** means Eskom Holdings SOC Ltd (Registration Number 2002/015527/30);
- 1.2.38 **'Eskom Connection Equipment'** means the plant, facilities, equipment and assets set forth in Annexure E (Eskom Connection Works) to Connect the Facility to the Distribution System, which shall be constructed in accordance with the Budget Quote and owned, operated and maintained by Eskom. The Eskom Connection Equipment shall include the Point of Utility Connection in cases, where this equipment is owned, operated and maintained by Eskom.
- 1.2.39 **'Eskom Connection Works'** means the works as described in Annexure E (Eskom Connection Works) required to be constructed, changed or enabled on the Distribution System side of the Point of Connection, save as may be otherwise provided herein, and all related activities by which the Eskom Connection Equipment shall establish the Connection between the Facility and the Distribution System, including if applicable the Upstream Works, the Contract Works and the Monopoly Works;
- 1.2.40 **'Eskom Equipment'** means the plant, facilities, equipment and assets set forth in this Cost Estimate Letter and in Annexure E (Eskom Connection Works) which shall be constructed by Eskom in accordance with the Budget Quote and owned, operated and maintained by Eskom;
- 1.2.41 **'Eskom Works'** means the works as described in Annexure E (Eskom Connection Works) comprising of the Eskom Connection Works but excluding the Contract Works;
- 1.2.42 **'Estimated Capital Costs'** means the estimated Capital Costs as set out in Annexure F (Estimated Capital Costs);
- 1.2.43 **'Estimated Dedicated Capital Costs'** means the estimated Dedicated Capital Costs as set out in Annexure F (Estimated Capital Costs);
- 1.2.44 **'Estimated Distribution Monopoly Works Charge'** means the estimated charge for Monopoly Works on the Distribution System as set out in Part C of Annexure G (Financial Specifications);
- 1.2.45 **'Estimated Transmission Monopoly Works Charge'** means the estimated charge for Monopoly Works on the Transmission System as set out in Part C of Annexure G (Financial Specifications);
- 1.2.46 **'Estimated Upstream Capital Costs'** means the estimated Upstream Capital Costs as set out in Annexure F (Estimated Capital Costs);
- 1.2.47 **'Facility'** means the Customer's plant, situated on the property described in Annexure C (Customer/Technical Details and Location of Facility), together with the Facility Connection Equipment for the safe, efficient and optimal operation of the plant, up to the Point(s) of Connection, which shall be designed, constructed, installed, operated and maintained by or on behalf of the Customer, but excluding the Eskom Connection Equipment whether or not located at the Connection Site;
- 1.2.48 **'Facility Connection Equipment'** means the Facility equipment, including the Point of Generator Connection, to connect the Facility to the Distribution System, which shall be constructed, owned, operated and maintained by the Customer. The Facility Connection Equipment shall also include the Point of Utility Connection in cases where this equipment is owned, operated and maintained by the Customer;
- 1.2.49 **'Facility Connection Works'** means the works to be carried out on the Facility side of the Point of Connection and all related activities by which the Facility Connection Equipment shall establish a Connection between the Facility and the Distribution System;

- 1.2.50 **'Grid Connection Code for Renewable Power Plants'** means the set of documents entitled "Grid Connection Code for Renewable Power Plants (RPPs) connected to the Electricity Transmission System (TS) or the Distribution System (DS) in South Africa" published by NERSA as amended, modified, extended, replaced or re-enacted from time to time;
- 1.2.51 **'Guarantee'** means a guarantee substantially in a form acceptable to Eskom and initially for the amount stated therein, which (i) is issued by a financial institution which (a) holds an Approved Credit Rating and (b) is registered under applicable Law to carry on business in South Africa and (ii) constitutes an on demand, unconditional and irrevocable commitment to pay by the financial institution by which it is issued;
- 1.2.52 **'HV'** means high voltage as defined in the Schedule of Standard Prices (Annexure H);
- 1.2.53 **'Maximum Export Capacity'** means the maximum capacity measured in 30 (thirty) minute integrating periods at the Point(s) of Supply/Connection notified by the Customer, as set out in Annexure C (Customer/Technical Details and Location of Facility), and accepted by Eskom for the delivery of electrical energy from the Facility to the Distribution System;
- 1.2.54 **'Monopoly Works'** means those works forming part of the Eskom Connection Works which remain Eskom's responsibility under the Self-Build Agreement to ensure a standard of work that meets Eskom's quality of supply, reliability and safety standards;
- 1.2.55 **'Monopoly Works Charge'** means the charge recouped or to be recouped by Eskom from the Customer for the Monopoly Works Cost;
- 1.2.56 **'Monopoly Works Cost'** means the cost of the Monopoly Works;
- 1.2.57 **'NERSA'** means the National Energy Regulator of South Africa established in terms of the National Energy Regulator Act (Act no 4 of 2004) or its successor-in-title;
- 1.2.58 **'NRS 048'** means the quality of supply specification issued by the South African Bureau of Standards, as revised from time to time or as replaced by a national standard;
- 1.2.59 **'Parties'** means Eskom and the Customer;
- 1.2.60 **'Point of Generator Connection (PGC)'** means the circuit-breaker and associated ancillary equipment (instrument transformers, protection, isolators) that connects a generator to any electrical network. The location of the Point of Generator Connection is described in Annexure C (Customer/Technical Details and Location of Facility);
- 1.2.61 **'Point(s) of Connection (POC)' or 'Point(s) of Supply (POS)'** means the electrical nodes on the Distribution System where the Customer's electrical equipment is physically connected to Eskom's electrical equipment. The location of the Point(s) of Connection is described in Annexure C (Customer/Technical Details and Location of Facility);
- 1.2.62 **'Point of Utility Connection (PUC)'** means one or more circuit-breakers and associated ancillary equipment (instrument transformers, protection, isolators), entirely independent of any PGC, that connects the Facility to the Distribution System. The Point of Utility Connection is described in Annexure C (Customer/Technical Details and Location of Facility);
- 1.2.63 **'Premium Connection'** means a connection made or to be made between the Facility and Eskom's network based on the customer's requirements, that are in excess of the specifications of a Standard Connection to provide for a more reliable and secure connection and includes the acquisition and installation of the Premium Equipment;
- 1.2.64 **'Premium Connection Charge'** means that portion of the Connection Charge payable for costs associated with the Premium Connection included in the scope of the Eskom Connection Works to meet customer specific requirements in excess of what is considered as the least life-cycle cost investment;
- 1.2.65 **'Premium Equipment'** means the equipment to be constructed, or to be installed if the Customer elects a Premium Connection and is in addition to and/or in place of the equipment installed in the case of a Standard Connection. Where applicable, the Premium

- Equipment shall comprise the equipment listed in Annexure E (Eskom Connection Works);
- 1.2.66 **'Pre-project Investigation Charge'** means the charge recouped by Eskom from the Customer for the Pre-project Investigation Cost;
- 1.2.67 **'Pre-project Investigation Cost'** means the cost charged to cover the investigation work prior to and including the issuing of the cost estimate letter or the budget quotation in case of applications that follow the major short process where the Cost Estimate Letter is not issued to the Customer. This is a standard charge based on the Cost Estimate Fee amount for the applicable supply size category;
- 1.2.68 **'Request for Budget Quote'** means the request for the Budget Quote letter in the form attached hereto as Annexure A to be completed by the Customer and submitted to Eskom;
- 1.2.69 **'Schedule of Standard Prices'** means Eskom's published tariffs, charges and the NMD Rules, applicable to customers as approved by NERSA and as amended from time to time;
- 1.2.70 **'Self-Build'** means the planning, financing, insuring, land rights acquisition, design, engineering, procurement, supply, fabrication, construction, erection, installation, inspection, pre-commissioning, testing, completion and commissioning of the Contract Works by the Customer, and on completion of the Contract Works the handover of the plant, facilities, equipment, assets and related designs, material guarantees/ warranties, deeds and other documentation by the Customer to Eskom;
- 1.2.71 **'Self-Build Agreement'** means the agreement between Eskom and the Customer pertaining to the Contract Works to be undertaken by the Customer, and the Monopoly Works falling under the responsibility of Eskom;
- 1.2.72 **'South African Grid Code'** means the set of documents entitled "South African Grid Code" published by NERSA as amended, modified, extended, replaced or re-enacted from time to time;
- 1.2.73 **'Standard Connection'** means a connection made to or to be made between the Facility and Eskom's network based on the lowest life-cycle costs design that meets the specifications in terms of NRS 048 and the Distribution Code for a technically acceptable solution;
- 1.2.74 **'Standard Connection Charge'** means that portion of the Connection Charge that is payable for costs associated with the Standard Connection;
- 1.2.75 **'Standard Equipment'** means the equipment to be constructed or to be installed if the Customer elects a Standard Connection. The Standard Equipment shall comprise the equipment listed in Annexure E (Eskom Connection Works);
- 1.2.76 **'Transformation Capacity Charge'** means the charge included in the Transmission Connection Charge for the use of transmission transformation assets that are dedicated to a CUSTOMER or to a group of CUSTOMERS. The transmission transformation assets may be new or existing and would have been paid for fully or partially by CUSTOMERS either through Transmission Connection Charges or through Transmission Use of System charges;
- 1.2.77 **'Transmission Connection Charges'** means that portion of the Connection Charge associated with the Transmission System, which may comprise of the Transmission Standard Connection Charge and the Transmission Premium Connection Charge;
- 1.2.78 **'Transmission Monopoly Works'** means those Monopoly Works associated with the Transmission System;
- 1.2.79 **'Transmission Premium Connection Charge'** means that portion of the Connection Charge associated with a Premium Connection and the Transmission System;
- 1.2.80 **'Transmission Quotation Fee'** means the portion of the Transmission Connection Charge to be paid by the Customer to Eskom for the issue of a/the Budget Quote, the value of which is set out in Annexure G (Financial Specifications) and will be valid for a period of 12 months from the date of this Cost Estimate letter, where after the value will be revised by

Eskom;

- 1.2.81 **'Transmission Standard Connection Charge'** means that portion of the Connection Charge associated with a Standard Connection and the Transmission System;
- 1.2.82 **'Transmission System'** means all Eskom's lines and substation equipment where the nominal voltage is above 132 kV. All other equipment operating at lower voltages are either part of the Distribution System or classified as transmission transformation equipment;
- 1.2.83 **'Upstream Capital Costs'** means the actual capital costs incurred by Eskom in carrying out the Upstream Works;
- 1.2.84 **'Upstream Connection Equipment'** means the Eskom Equipment associated with the Upstream Works;
- 1.2.85 **'Upstream Works'** means those works forming part of the Eskom Connection Works, which are considered to be for the benefit of many customers and cannot be directly allocated to any one or more customers at the time of the Connection.
- 1.2.86 **'Use-of-System Charges Security'** means a Bank Guarantee issued for an amount equal to the Use-of-System Charges Security Amount; and
- 1.2.87 **'Use-of-System Charges Security Amount'** means an amount equivalent to the estimated amount of three (3) consecutive months of the DUOS Charge (generators).

1.3 In this Cost Estimate Letter, unless a contrary intention clearly appears:-

- 1.3.1 the headings to the clauses and sub-clauses in this Cost Estimate Letter are for the purpose of convenience and reference only, and shall not be used in the interpretation, modification, amplification of any clause thereof;
- 1.3.2 words and expressions defined in this Cost Estimate Letter shall bear the same meanings in the Annexures to this Cost Estimate Letter unless specifically defined in those Annexures;
- 1.3.3 any words or expressions for which no meanings have been ascribed in this Cost Estimate Letter shall have the meanings ascribed to them in the Act or, in the absence of such meanings, the meanings ascribed to them in the Code(s);
- 1.3.4 words and expressions importing:
 - a. any one gender includes the other gender;
 - b. the singular includes the plural and vice versa;
 - c. natural persons include juristic persons and vice versa;
- 1.3.5 any reference to any law shall include any amendments, modifications, extensions, replacements or re-enactments thereof then in force;
- 1.3.6 any reference to 'this Cost Estimate Letter' shall mean this Cost Estimate Letter together with its Annexures as amended, modified or supplemented;
- 1.3.7 any reference to 'writing' or 'written' shall include all methods of reproducing words in a legible and non-transitory form;
- 1.3.8 any reference to 'persons' shall include individuals, firms and corporations, joint ventures, trusts, unincorporated associations and organisations, partnerships and any other entities, in each case whether or not having a separate legal personality; and
- 1.3.9 any reference to either 'Party' or 'any person' shall include its legal successors and permitted assignees.
- 1.3.10 in the computation of periods of time from a specified day to a later specified day, 'from' means from and including and 'until' or 'to' means to and including.
- 1.3.11 any reference in this Cost Estimate Letter to a 'Clause' or 'sub-clause' is a reference to a clause or sub-clause contained in this Cost Estimate Letter;

- 1.3.12 any reference to 'Clause', 'Annexure' and Part ' are references to the relevant clause, annexure and part, respectively, of this Cost Estimate Letter, references to 'Annex' are to the relevant annex to an Annexure of this Cost Estimate Letter, references to 'Paragraph' are to the relevant paragraph in an Annexure or Annex to this Cost Estimate Letter;
- 1.3.13 where figures are referred to in numerals and in words, if there is any conflict between the 2 (two), the words shall prevail;
- 1.3.14 any reference to number of days shall be a reference to calendar days unless Business Days are specified; and
- 1.3.15 the rule of construction that this Cost Estimate Letter shall be interpreted against the Party responsible for the drafting or preparation hereof, shall not apply.

2. TECHNICAL

- 2.1 The Maximum Export Capacity (MEC) and the voltage level of the Connection are set out in Annexure C (*Customer/Technical Details and Location of Facility*).
- 2.2 The location of the Point(s) of Connection for the Facility is described in Annexure C (*Customer/Technical Details and Location of Facility*).
- 2.3 The Customer shall provide the relevant protection, synchronising and control equipment at the Point(s) of Connection which is compatible with the protection standard required by Eskom as set out in Annexure D (*the Standard for the Interconnection of Embedded Generation*).
- 2.4 Prior to the Connection of the Facility to the Distribution System, the Customer shall comply with all applicable laws including but not limited to those governing the electricity supply industry including regulations, the Codes, directives and guidelines, failing which Eskom may refuse to allow the Connection, or disconnect the Connection until such time as there is compliance with such laws.

2.5 Network performance and quality of supply

- 2.5.1 Eskom is required to provide a standard of quality of supply, which complies with NRS 048. The Customer shall comply with the quality of supply limits determined in accordance with NRS 048.
- 2.5.2 Eskom will use its reasonable endeavours to furnish the Customer with a reliable network for the delivery of electricity from the Facility at the Point(s) of Connection. However, it is not practicable for Eskom to guarantee that the continuity and voltage quality at the Point(s) of Connection will always be maintained under all contingencies. It will be incumbent on the Customer to take adequate measures to protect its business and the Facility against any damage and / or losses arising from frequency deviations, loss of Connection or connection/supply interruptions, voltage variations (including voltage dips), voltage harmonics, interharmonics, voltage flicker, voltage unbalance, voltage swells and transients, undervoltages and overvoltages at the Point of Connection.
- 2.5.3 Eskom generally contracts with Customers for a Standard Connection in terms of which no specific voltage dip or interruption limits will be specified in the contract. Indicative levels of voltage dip and interruption performance may be obtained on request from Eskom. In order to ensure greater levels of assurance on interruption (and in some cases dip) performance, generators may elect to:
- 2.5.3.1 pay for the necessary infrastructure required to provide a Connection with higher levels of reliability; or
- 2.5.3.2 pay for additional monitoring equipment to effect monitoring of performance at the Point of Connection.

2.6 Technical assumptions

- 2.6.1 This Cost Estimate Letter is based on the information provided by the Customer in Part 1 of the application for this Cost Estimate Letter attached hereto as Annexure B (Connection Application) and assumes that the Connection Works to be constructed is for the Connection of the Facility and not for any other customer. If other customers are to be connected the cost to connect and the technical assumptions may change.
- 2.6.2 This Cost Estimate Letter is based on the technical assumptions as set out in Part C of Annexure E (Eskom Connection Works).

3. CONNECTION WORKS

3.1 Facility Connection Works

The Customer shall be responsible for the portion of the Connection Works comprising the Facility Connection Works.

3.2 Contract Works

- 3.2.1 If a Self-Build option is elected by the Customer, the Customer shall be responsible for the portion of the Connection Works comprising the Contract Works as set out in Part B 2 of Annexure E (Eskom Connection Works) and associated timelines in accordance with the terms and conditions of the Self-Build Agreement. Subject to the applicable terms in the Self-Build Agreement, the Parties may agree that an additional portion of the Eskom Works be included in the Contracted Works.
- 3.2.2 The Customer must indicate in the Request for the Budget Quote whether it elects to Self-build and must also indicate the estimated timeline to complete the Contract Works, including any additional portion of the Eskom Works as agreed to by the Parties in terms of Clause 3.2.1.
- 3.2.3 The approval of a Self-Build option by Eskom and the take-over of any Contract Works by Eskom will be subject to the conditions contained in Eskom's Standard for HV self-build projects (a copy of which will be made available on request) and the Self-build Agreement to be concluded, which inter alia shall include the following:
- 3.2.3.1 the Contract Works must be built according to the Eskom standards and specifications and Eskom will not under any circumstances take over and energise any asset that is not built according to the Eskom standards; and
- 3.2.3.2 the Customer shall pay all costs incurred by Eskom in relation to all Monopoly Works (see Annexure F).

3.3 Eskom Connection Works

- 3.3.1 Eskom shall be responsible for the portion of the Eskom Connection Works comprising the Eskom Works as set out in Annexure E (Eskom Connection Works).
- 3.3.2 If a Self-Build option is not elected by the Customer, the Eskom Works shall be as set out in Part A of Annexure E (Eskom Connection Works).
- 3.3.3 If a Self-Build option is elected by the Customer, the Eskom Works shall be as set out in Part B.1 of Annexure E (Eskom Connection Works).

3.4 Estimated Connection Timelines

- 3.4.1 Subject to the content of this Cost Estimate Letter and the conditions of any Budget Quote accepted later, the estimated period for the completion of the Eskom Connection Works, calculated from the commencement of construction by Eskom, where the Customer does not elect an option of Self-Build, is set out in Part A.3 of Annexure E (Eskom Connection Works). The estimated period provided in this Cost Estimate Letter is not binding on Eskom in any way.

- 3.4.2 Where the Customer elects an option of Self-Build, the connection timeline shall be determined by the Parties taking into consideration resource availability for commissioning and related activities.

4. FINANCIAL

4.1 Total Estimated Capital Costs

4.1.1 The total Estimated Capital Costs are:

- 4.1.1.1 if the Customer does not elect to Self-Build are set out in Part A of Annexure F (Estimated Capital Costs); or
- 4.1.1.2 if the Customer elects to Self-Build are set out in Part B of Annexure F (Estimated Capital Costs).

4.2 Connection Charge Estimate

4.2.1 The Connection Charge Estimate:

- 4.2.1.1 if the Customer does not elect to Self-Build is set out in Part B of Annexure G (Financial Specification); or
- 4.2.1.2 if the Customer elects to Self-Build is set out in Part C of Annexure G (Financial Specification).

4.2.2 The Customer shall pay the Connection Charge Estimate in accordance with the Budget Quote.

4.3 Connection Charge Guarantee

- 4.3.1 If the Customer elects in its acceptance of the Budget Quote to pay the Connection Charge Estimate in instalments, the Customer shall deliver a Connection Charge Guarantee in accordance with the Budget Quote.

4.4 Early Termination Guarantee

- 4.4.1 Eskom will, in connecting the Facility to the Distribution System incur certain expenditures and costs, which are not directly recovered through the Connection Charge. In the event of an early termination of the project or the DCUOSA, such costs shall be recovered by Eskom from the Early Termination Guarantee.
- 4.4.2 The Customer shall deliver an Early Termination Guarantee in accordance with the Budget Quote. The Early Termination Guarantee Amount is set out in Annexure G (Financial Specifications).

4.5 Contract Works Security

4.5.1 Where the Customer elects an option of Self-Build, the Customer shall deliver the Contract Works Security in accordance with the Budget Quote.

4.6 DUoS Charge (generators)

- 4.6.1 The Customer shall pay to Eskom the DUoS Charge (generators) for the Facility's use of the Distribution System, subject to the terms and conditions set out in the Distribution Connection and Use-of-System Agreement.
- 4.6.2 ESKOM's prevailing Schedule of Standard Prices, at any time shall serve as prima facie evidence of the DUoS Charge (generators) in force at that time.
- 4.6.3 Particulars of the DUoS Charge (generators) currently in force are set out in Annexure H (Use of System Schedule of Standard Prices for Distribution Connected Generators).
- 4.6.4 The Customer shall deliver to Eskom Use-of-System Charges Security in accordance with the Budget Quote. Eskom may determine on written notice to the Customer at Budget Quote stage (if the Customer is appointed as preferred bidder as part of a regulated bid programme for new generation capacity), that the Customer is not required to provide the

Use-of-System Charges Security. The Use-of-System Charges Security Amount is set out in Annexure G (Financial Specifications).

5. BUDGET QUOTE

5.1 Eskom shall provide a Budget Quote to the Customer, provided that within 12 (twelve) months of the date of this Cost Estimate Letter the Customer complies with the Budget Quote application conditions set out in Clause 5.2 below.

5.2 Budget Quote application conditions

5.2.1 Where the Customer intends to submit bids regulated by the Electricity Regulations on New Generation Capacity, the entity responsible for procurement (currently the Department of Energy) must pre-qualify applications to receive a Budget Quote based on the published pre-qualification criteria.

5.2.2 Where the Customer does not intend to submit a bid as part of a regulated bid programme, the Customer shall submit:

5.2.2.1 a letter from NERSA confirming receipt of an application for a licence, if applicable to generate and export energy;

5.2.2.2 proof of land ownership or permission to use the land intended;

5.2.2.3 EA progress – at least a letter of confirmation from the Department of Environmental Affairs, approving the scoping report and appointment of an environmental consultant to conduct the studies necessary to obtain environmental approvals or permits; and

5.2.2.4 proof of reasonable viability of the proposed technology regarding the primary energy source.

5.2.3 The Customer shall complete and submit Annexure A (Request for Budget Quote) to Eskom.

5.2.4 The Customer shall complete and submit Part 2 of the application form to Eskom.

5.2.5 The Customer shall pay the Distribution Quotation Fee and where applicable the Transmission Quotation Fee once the Customer has been pre-qualified in terms of Clause 5.2 and/or satisfied the required conditions in Clause 5.2.

5.3 Cost Estimate Fee and quotation fees

5.3.1 Eskom incurs costs in providing a Cost Estimate Letter. These costs are payable upfront as a Cost Estimate Fee before Eskom will proceed with the preparation of the Cost Estimate Letter.

5.3.2 Should a Budget Quote not be requested by the Customer, the Cost Estimate Fee will be forfeited.

5.3.3 Similarly, Eskom will incur costs, such as survey, environmental impact assessments, and detailed design, in providing a Budget Quote. These costs are payable upfront as a Distribution Quotation Fee and where applicable a Transmission Quotation Fee, before Eskom will proceed with the Budget Quote.

5.3.4 Should the Budget Quote not be accepted for any reason, the Cost Estimate Fee will be forfeited and any actual costs incurred by Eskom shall be set-off against any amounts paid in advance by the Customer and the balance refunded to the Customer.

5.3.5 Should the Customer require a revision of scope of the Connection after paying the Cost Estimate Fee and after receiving the Cost Estimate Letter, the Customer will be required to pay to Eskom another upfront cost estimate fee before another cost estimate letter will be provided.

6. LEGAL

- 6.1 Eskom may not connect the Facility to the Distribution System unless the Customer has obtained approval or a license from NERSA and complies with the prevailing law in general. Any costs incurred by Eskom, at or after providing the Budget Quote, is payable by the Customer irrespective of whether these approvals are obtained or not.
- 6.2 If the Customer wants Eskom to proceed to provide a Budget Quote the Customer must complete the Request for a Budget Quote, in the form attached to this Cost Estimate Letter as Annexure A and forward the request together with the Distribution Quotation Fee and/or the Transmission Quotation Fee where applicable and other required information and documentation, in accordance with Clause 5.2.
- 6.3 Any changes to the assumptions and scope must be clearly indicated to Eskom in writing, which will result in a revised cost estimate letter or Budget Quote and may result in a new quotation fee being payable.
- 6.4 The Customer shall enter into a written Distribution Connection and Use-of-System Agreement with Eskom in accordance with the Budget Quote.
- 6.5 Where the Customer elects to exercise the Self-Build option, the Customer shall enter into a written Self-Build Agreement with Eskom. If the Customer fails to construct the Contract Works in accordance with the required Eskom standards and specifications, Eskom will not be obligated to take ownership of these assets. In this instance, the Customer will be in breach of the Self-Build Agreement. Should the Customer fail to remedy its breach and meet the requirements, Eskom may, in its sole discretion, provide to the Customer a new quotation to complete the project and take over the assets.
- 6.6 If the Customer intends also to consume electricity at the Facility, which is to be supplied by Eskom, and the Customer does not have an electricity supply agreement or the terms and conditions of the Customer's existing electricity supply agreement will change due to the establishment of the Facility, the Customer shall be required to sign an electricity supply agreement that will regulate the supply of electricity to the Facility. Please contact Motlatsi Makhari at telephone number +27 53 830 5483 if this is the case.
- 6.7 The Customer shall be liable to pay any taxes and/or levies relating to the subject matter hereof, which may be imposed in terms of any existing and/or future legislation or as approved by NERSA.
- 6.8 The terms and conditions of this Cost Estimate Letter are subject to the provisions of the Code(s), the Act(s) and the rules and regulations issued thereunder, and of Eskom's licences and Schedule of Standard Prices, as amended or re-enacted from time to time and any other applicable laws.
- 6.9 The information contained in this Cost Estimate Letter should not be used for anything other than its intended purpose. Eskom accepts no liability, contractual or otherwise, as a result of any reliance on this information and the Customer accordingly indemnifies Eskom against any liability emanating from the use of this information.
- 6.10 Eskom's bank account details for direct deposits or bank transfers shall be specified in the invoice issued by Eskom in respect of the Distribution Quotation Fee and the Transmission Quotation Fee, if applicable.
- 6.11 The Customer shall use the account number on the invoice as the reference number for the deposit or transfer. Please submit proof of payment following your Request for Budget Quote.

For any information, enquiries or confirmation, please contact Motlatsi Makhari at telephone number +27 53 830 5483.

I thank you for the opportunity of allowing Eskom to provide this service and trust that your favourable written reply will reach this office shortly.

Yours sincerely



Seetsele Seetswane

ACTING SENIOR MANAGER: GRID ACCESS UNIT

Date: 21 May 2020

Cc Customer file

REQUEST FOR BUDGET QUOTE

Mr Eugene Marais
 Head of Development: Africa
 Dwarsrug Wind Farm (Pty) Ltd
 PO Box 45063
 CLAREMONT
 7735

Date:

Eskom Holdings SOC Ltd (Reg No: 2002/015527/30)

Motlatsi Makhari

IPP Executive

Fax number: +27 86 776 2850

PO Box 606

KIMBERLEY

8300

Dear Motlatsi Makhari

REQUEST FOR BUDGET QUOTE FOR CONSTRUCTION OF WORKS TO CONNECT A GENERATOR TO THE DISTRIBUTION SYSTEM FOR DWARSRUG WIND FARM LOCATED IN LOERIESFONTEIN, NORTHERN CAPE PROVINCE

I/We have read and understood the terms of the Cost Estimate Letter dated **21 May 2020**, reference number IPP253915881. I/We hereby request Eskom to prepare a Budget Quote for our consideration.

I/We acknowledge that I/we intend to exercise the **Self-Build option** and herewith submit an application to do so. *OR*

I/We do not intend to exercise the Self-Build option [*strike through the option which is not applicable*].

If I/we have elected the Self-Build option above, the estimated timeline to complete the Contract Works is calendar months.

Please provide an invoice for the following:

Description	Cost	Select
Distribution Quotation Fee	R1 872 280,00 (+ VAT = R2 153 122,00) and	
Transmission Quotation Fee	R0,00 (+ VAT = R0,00)	
Total Quotation Fee	R1 872 280,00 (+ VAT = R2 153 122,00)	

Please find herewith also the documentation/information required by Eskom as set out in the Cost Estimate Letter to proceed with the Budget Quote.

I acknowledge that Eskom will release the project for the Budget Quote phase when all of the following conditions are met:

- Request for Budget Quote letter received
- Quotation Fee(s) paid
- Grid Application Form received – Part 1 & Part 2

- Letter from NERSA regarding license requirement
- VAT Number

All future correspondence must be addressed as follows:

_____code_____

Signed for and on behalf of Dwarsrug Wind Farm (Pty) Ltd on 20.. by in my capacity as (who confirms that I am duly authorised).

CONNECTION APPLICATION

Part 1 – Application Form

DETAILS OF APPLICANT									
1. Application relationship	Developer <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Landowner <input type="checkbox"/> Other (specify): _____ _____								
2. Full name of applicant(s) / lead developer Customer title and full first names: Customer's initials Surname/Company name Note that if there is more than one developer, as much information as possible should be provided	Dwarsrug Wind Farm (Pty) Ltd								
3. Identity number or Company/Close Corporation registration number	2009/007986/07								
4. Date of submission	<table border="1" style="margin: auto;"> <tr> <td style="padding: 2px 10px;">2</td> <td style="padding: 2px 10px;">0</td> <td style="padding: 2px 10px;">1</td> <td style="padding: 2px 10px;">9</td> <td style="padding: 2px 10px;">0</td> <td style="padding: 2px 10px;">6</td> <td style="padding: 2px 10px;">1</td> <td style="padding: 2px 10px;">3</td> </tr> </table>	2	0	1	9	0	6	1	3
2	0	1	9	0	6	1	3		
5. Do you intend to submit a bid in terms of a regulated power purchase procurement process (e.g. REFIT)	YES & NO (we intend submitting into the Round 5 of the REIPPPP but unsuccessful projects may be sold via private offtake agreement)								
6. If YES, provide the name of the programme	REIPPPP – Round 5								

**CUSTOMER/TECHNICAL DETAILS AND
LOCATION OF FACILITY**

Table 1

1.1	Customer	Dwarsrug Wind Farm (Pty) Ltd (Reg. No. 2009/007986/07)
1.2	Location of the Facility	Loeriesfontein
1.3	Cost Estimate Letter reference number	IPP253915881
1.4	Date of Cost Estimate Letter	21 May 2020
1.5	Maximum Export Capacity	140 MW
1.6	Voltage level of the Connection	132kV
1.7	Location of Point of Connection (POC)	Dwarsrug 132kV Busbar
1.8	Point of Generator Connection	Narosies 132kV Feeder Bay
1.9	Point of Utility Connection	Dwarsrug 132kV Feeder Bay




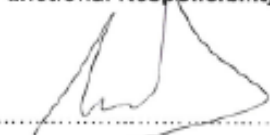
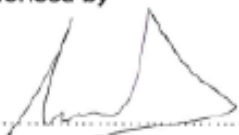
STANDARD FOR INTERCONNECTION OF EMBEDDED GENERATION

 Eskom	Standard	Group Technology
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Title: STANDARD FOR THE INTERCONNECTION OF EMBEDDED GENERATION	Unique Identifier:	240-61268576
	Alternative Reference Number:	34-1765
	Part:	15 - Protection 18 - Telecontrol
	Area of Applicability:	Eskom
	Documentation Type:	Standard
	Revision:	1
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Disclosure Classification:

Controlled Disclosure

Compiled by	Approved by	Approved by
		
Andrew Craib Chief Engineer	Graeme Topham Protection SC Chairperson	Marlini Sukhnandan Telecontrol SC Chairperson
Date: 18 October 2013	Date: 21 October 2013	Date: 23 October 2013
Functional Responsibility	Authorised by	
		
Richard McCurrach Snr Manager PTM&C CoE	Richard McCurrach Snr Manager PTM&C CoE	
Date: 24/10/2013	Date: 24/10/2013	

ESKOM CONNECTION WORKS**PART A: SELF-BUILD OPTION NOT ELECTED BY CUSTOMER – ESKOM BUILD****A.1 Dedicated Connection Equipment**

A.1.1 Standard Equipment on the Transmission System – Not applicable (N/A)

A.1.2 Premium Equipment on the Transmission System – N/A

A.1.3 Standard Equipment on the Distribution System – N/A

A.1.4 Premium Equipment on the Distribution System – N/A

A.2 Upstream Connection Equipment

A.2.1 Equipment on the Distribution System – N/A

A.2.2 Equipment on the Transmission System – N/A

A.3 Estimated Period

A.3.1 The estimated period for the completion of the Eskom Connection Works, calculated from the commencement date of the Eskom Connection Works, shall be 0 months.

PART B: SELF-BUILD OPTION ELECTED BY CUSTOMER**B.1 Eskom Works****B.1.1 Dedicated Connection Equipment**

B.1.1.1 Standard Equipment on the Transmission System – N/A

B.1.1.2 Premium Equipment on the Transmission System – N/A

B.1.1.3 Standard Equipment on the Distribution System – N/A

B.1.1.4 Premium Equipment on the Distribution System – N/A

B.1.2 Upstream Connection Equipment

B.1.2.1 Equipment on the Distribution System – N/A

B.1.2.2 Equipment on the Transmission System – N/A

B.1.3 Monopoly Works

- B.1.3.1 ESKOM will appoint a clerk of works to monitor the quality of the construction as well as the quality of material.
- B.1.3.2 ESKOM will appoint a project manager to do site inspections and also monitoring of workmanship and materials/equipment.
- B.1.3.3 ESKOM will monitor the CUSTOMER's environmental management in respect of the Contract Works
- B.1.3.4 ESKOM will verify the design and equipment of the Contract Works
- B.1.3.5 ESKOM will commission the metering, protection and the supervisory control and data acquisition system (SCADA), which will be installed by the CUSTOMER in terms of the Self-Build Agreement.
- B.1.3.6 ESKOM will monitor the installation of the Contract Works.
- B.1.3.7 ESKOM will be responsible for any commissioning in respect of the Contract Works required after the Connection of the Facility to the Distribution System.
- B.1.3.8 ESKOM will manage any outages required on the Distribution System and or Transmission System.
- B.1.3.9 ESKOM will check and accept the route selection and will monitor the process of registration of the Servitudes in the name of ESKOM.
- B.1.3.10 ESKOM will effect the closing span to liven up the Connection Works as well as the optical fibre ground wire connection.

B.2 Contract Works

B.2.1 Dedicated Connection Equipment

- B.2.1.1 Standard Equipment on the Transmission System – N/A
- B.2.1.2 Premium Equipment on the Transmission System – N/A
- B.2.1.3 Standard Equipment on the Distribution System
 - Construction of a 132kV feeder bay at Narosies collector station.
 - Construction of Dwarsrug 132 kV substation with 1 x 132kV incoming feeder bay and 132kV outgoing feeder bay to the IPP (POC). IPP needs to allow for a servitude which does not encroach on required setback distances that could possibly allow a future plant to connect at the substation.
 - Construction of approximately 3 km single circuit 132kV overhead line between Narosies collector station and Dwarsrug substation, with minimum Kingbird conductor size.
 - The Narosies – Dwarsrug 132kV line should be installed with a minimum of 48 core OPGW. The IPP substation's SCADA will be required to connect to National, Standby National as well as Regional control via the IPP gateway and compatible communication interface, and will require telecommunication equipment to be installed at Dwarsrug substation. Substation Automation equipment will be required to enable remote access and data retrieval to Dwarsrug substation. Communication access to the IPP substation's facility meters will be required by Eskom.
- B.2.1.4 Premium Equipment on the Distribution System – N/A

PART C: TECHNICAL ASSUMPTIONS

Connection Request

South Africa Mainstream Renewable Power Developments (Pty) Ltd has applied to connect 140 MW of Wind generation to the Eskom grid at Helios Main Transmission Substation (MTS) located in the Northern Cape.

The developer has requested a self-build agreement for the construction of all grid assets, and has identified a target connection date of 31 December 2020.

Existing Network

The location of the Mainstream Dwarsrug site lies 7 km from Helios. Helios MTS currently consists of 1 x 45 MVA 400 / 22 kV step-down transformation and 1 x 10 MVA 22 / 66 kV step-up transformation to supply the 66 kV radial feed to Loeriesfontein, Calvinia and Moutonsdrift Distribution substations. There is also 2 x 40 MVA 400 / 50 kV transformation at Helios MTS for supply to Transnet.

Two successful Round 3 IPPs are connected at Helios: Loeriesfontein 2 140 MW wind (referred to as Loeries / Doornpan) and Khobab 140 MW wind – both developed by Mainstream Renewables. Eskom Transmission will be extending the 400 kV busbar and establishing 400 / 132 kV transformation (1 x 500 MVA) on behalf of the developer. While the land parcel on which Dwarsrug is planned is situated adjacent to the land parcel of Loeriesfontein 2, there is insufficient capacity on the Tern line from Loeriesfontein 2 to Helios to accommodate an additional 140 MW of generation.

A further project was a successful bidder in Round 4 of the RE IPP programme: Solar Capital's Loeriesfontein Orange 75 MW PV plant (with substation Gousblom). This plant lies East of Helios, on the same trajectory as Dwarsrug and will be connected to the Narosies collector switching station.

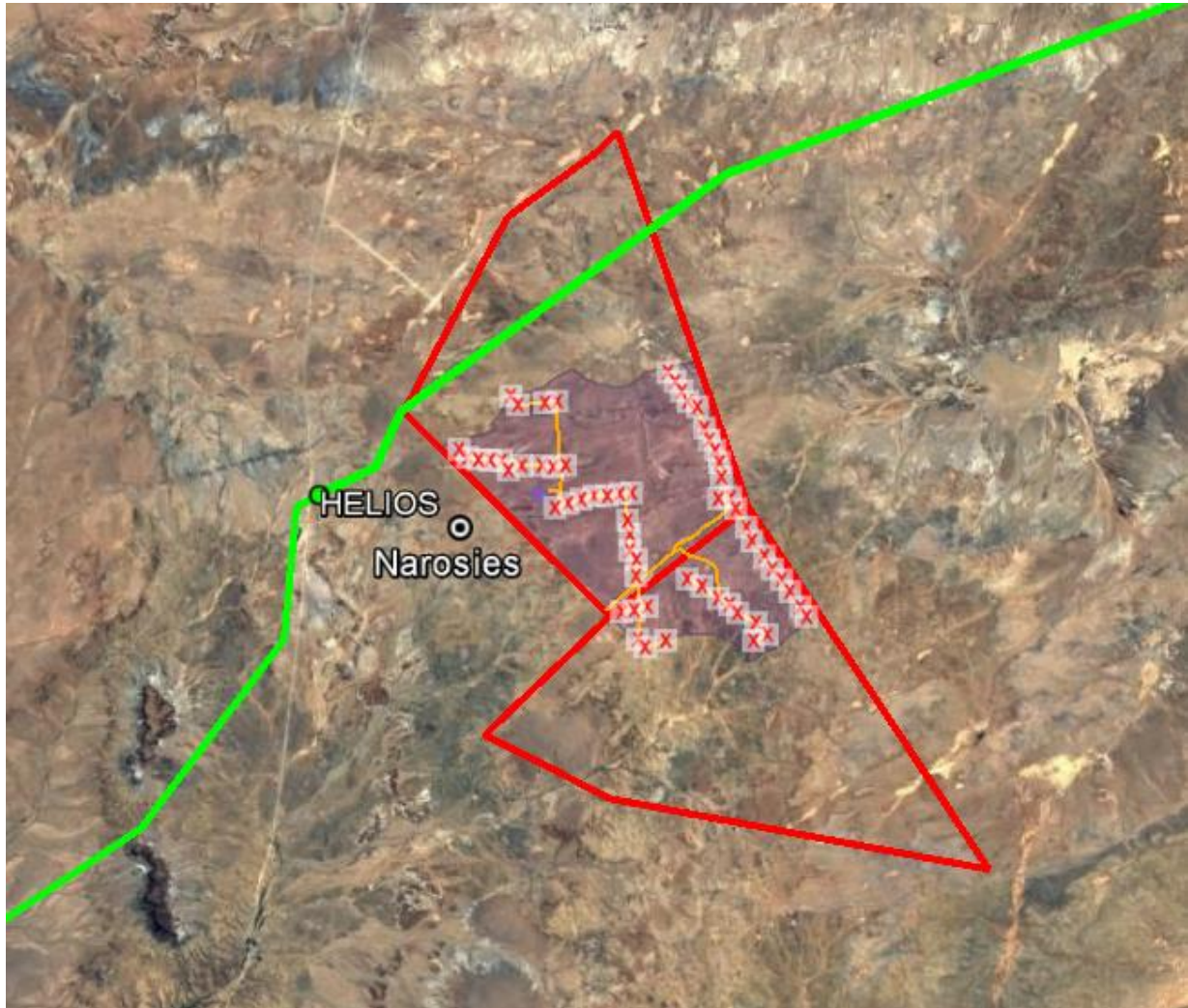


Figure 1: Geographic map showing Mainstream's site in relation to Helios

Distribution Load Forecast

There is one 22 kV feeder supplied at Helios MTS via the 1 x 45 MVA 400 / 22 kV transformer, as well as the 66 kV load at Loeriesfontein, Calvinia and Moutonsdrift (stepped up via 1 x 10 MVA). As of 2014, the peak 22 kV load was 7.2 MVA, and is presently not growing.

In the future, there may be motivation to normalise the load-supplying transformation (i.e. installation of a 132 / 66 kV transformer) to improve fault levels and reduce losses in the area. A project has not yet been initiated for this, as this is not considered high priority for Eskom Distribution. This may, however, not necessarily take place at Helios.

Strategic Plans

The area east of Helios contains a significant amount of interest from prospective renewables developers. There are at least another 2 x 75 MW PV known, planned developments in addition to the already approved 75 MW Loeriesfontein Orange PV site and this potential 140 MW wind farm. The strategic plan for this area is therefore to establish a collector station, Narosies, close to the Loeriesfontein Orange site with a high capacity 6 km 132 kV line back to Helios MTS. This line will be able to support a minimum of 400 MW of generation.

The strategic plan for the area south of Helios is to establish a collector station, Rooiberg, approximately 11 km along the 66 kV line, and build a high capacity 132 kV line to that site. Given potential difficulty with servitudes directly south and east of the MTS (due to civil aviation act

regulations for the nearby air strip) it may be beneficial to build the first 1.5 km of this line as a double circuit, sharing structures with the line going east to the Narosies collector station. In the future if capacity of this twin Tern line begins to limit generation, the next step would be to install a 132/66 kV transformer at Rooiberg, and supply the remainder of the 66 kV network from that point. This will allow for the decommissioning of the first 11 km of 66 kV line and for a second 132 kV line to be built from Helios to Rooiberg without needing a new servitude. It will also remove 66 kV voltage from Helios MTS, allowing for Distribution to maintain and operate the 132 kV transformer, and making further space available in the MTS for an additional 400/132 kV transformer if needed in the future.

Connection Proposal

The following connection proposal was studied in DlgSILENT PowerFactory using the latest WCOU case file. The file, including this IPP study as a variation, has been saved with the project documentation.

For this study, it was assumed that all three existing preferred bidder generators at Helios are generating at full capacity.

Scope of Work

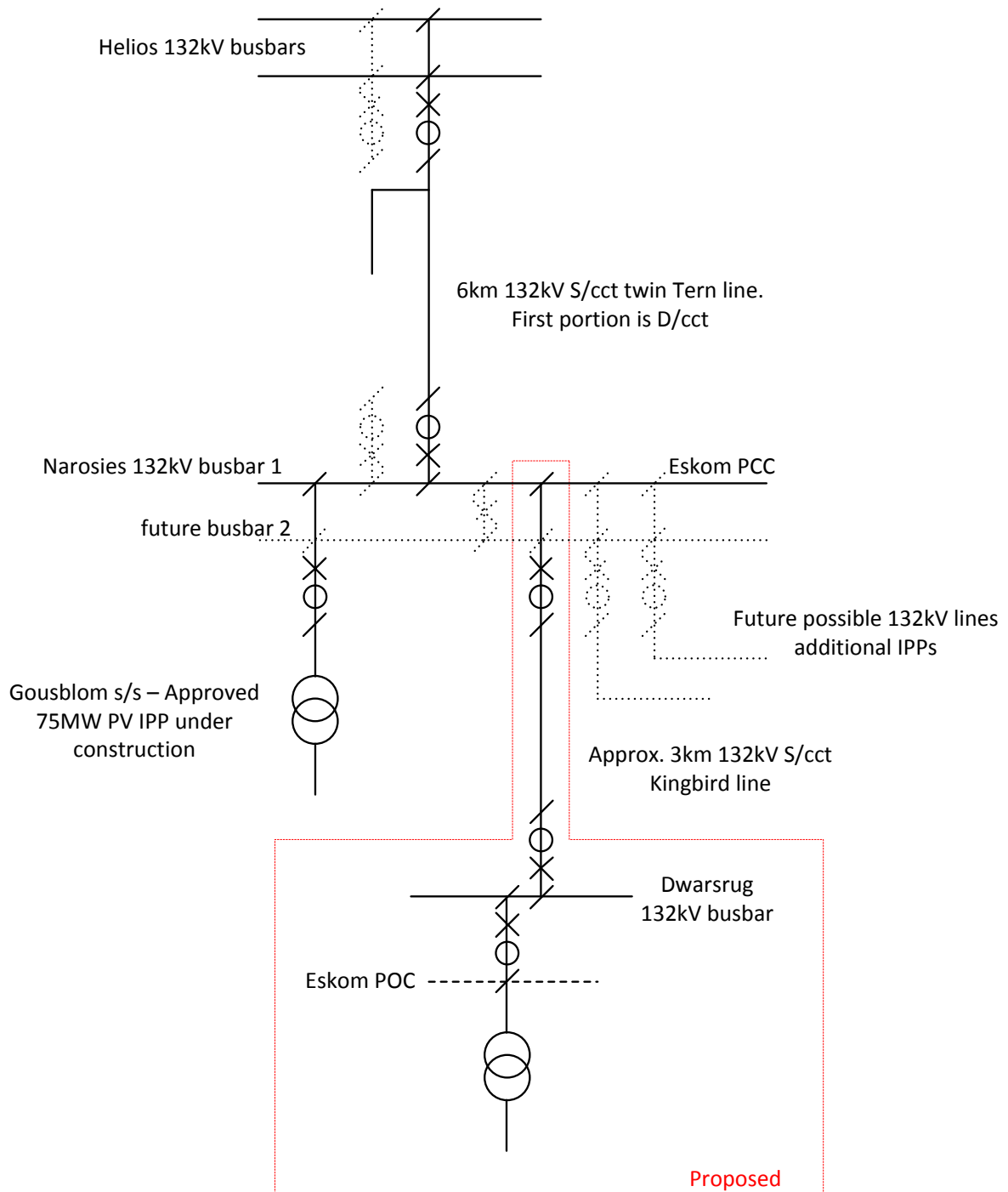


Figure 2: Diagram of proposed connection arrangement

Transmission Scope

- Additional 500MVA 400/132kV transformer will be required if the preferred bidders at Helios MTS exceed 140MW. The BQ will then include a Transmission Scope of Work for the required additional capacity for second 500 MVA 400/132 kV Transformer at Helios MTS.

Distribution Scope

Eskom will carry out the following scope:

- Provide Project Management, Project Engineering, Land Development, ED and Field Services function.

Results

Notes on the following results:

VVT = Voltage Variation Test (Positive for a voltage drop when disconnecting the generator)
 V = Voltage with the generator connected
 VRise = Voltage rise from nearest upstream OLTC regulated busbar
 HGHL / HGLL = High Generation (this IPP) with High Load; and High Generation (this IPP) with Low Load
 Losses: Positive indicates an increase and negative a decrease

Voltage tests

Dwarsrug was modelled as a power factor controlled generator, with a unity setpoint. All voltage parameters were within allowable limits.

Table 1: Voltage tests

	High load scenario			Low load scenario		
	Voltage (p.u.)	VVT (%)	Vrise (p.u.)	Voltage (p.u.)	VVT (%)	Vrise (p.u.)
Dwarsrug 132	1.041	-0.2	0.004	1.041	-0.2	0.004
Narosies 132	1.039	-0.4	0.002	1.039	-0.4	0.002
Helios 132	1.037	-0.5	0.000	1.037	-0.5	0.000

Thermal loadings

Simulations indicate that all thermal loadings will remain within allowable limits.

Fault Levels

The fault levels are provided below. These should not be used for the design of the plant but are an indication of the expected fault level, based on known factors, and estimates of future infrastructure. During preferred bidder stage, the fault level will be analysed in further detail and be provided to the IPP.

Table 2: Fault levels

	Nom voltage (kV)	3 phase (kA)	X:R	1 phase to GND (kA)	R1 (p.u.)	X1 (p.u.)	R0 (p.u.)	X0 (p.u.)
Dwarsrug	132	10.6	6.32	11.5	0.007	0.042	0.005	0.035
Narosies	132	11.9	7.04	12.9	0.005	0.038	0.004	0.031
Helios	132	13.7	7.62	17.0	0.005	0.033	0.001	0.014

Loss Studies

This plant is estimated to increase losses by approximately 0.1% of its capacity. This figure has been minimised as far as possible by specifying a high capacity conductor between Helios and Narosies substation.

Contingency Analysis

In the event of the proposed Dwarsrug – Narosies or Helios - Narosies lines being out, Dwarsrug Wind Farm will not be able to generate onto the Eskom grid. Further comments on 400 kV contingencies may be presented by Transmission Grid Planning.

Load Shedding Analysis

Load flow studies have been performed for the scenario when this area is experiencing load shedding. During this time the generator may remain generating at full power into the network.

Construction and Auxiliary Supply

The developer has indicated that 3000kVA auxiliary supply is required. This can be accommodated at the POC. The developer has indicated that a construction supply is not applicable.

Additional Considerations

The following other internal departments are informed of this proposal, and where special requirements were requested, they are listed below: Network Optimisation, Project Engineering, Protection and Settings, Telecontrol, Telecomms and Metering, and Land Development. All relevant correspondence is saved with the project documentation.

Network Optimisation

Project Engineering

Protection and Settings

Telecontrol, Telecomms and Metering

Land Development

Plant Engineering

The report has been sent to Plant Engineering requesting Quality of Supply input. Feedback is yet to be received.

Aspects Relating to EIA Content

The EIA for this project has not yet been reviewed by Eskom Network Planning.

Conclusion

The proposed Distribution integration does not present any concerns to Eskom at this stage. However this is subject to favorable Quality of Supply input from Plant Engineering whose feedback is yet to be received. More accurate fault levels will be provided once Transmission Grid Planning has calculated future fault levels at Helios. The worst case scenario should be considered to be 40 kA at the Helios 132 kV busbar.

ESTIMATED COSTS AND MONOPOLY WORKS

PART A: SELF-BUILD OPTION NOT ELECTED BY CUSTOMER (ESKOM BUILD)

The estimated costs associated with the Eskom Works, including escalation and overheads are as follows:

Table 1 (a) Summary of allocated Estimated Dedicated Capital Costs

Cost Item	Excl. VAT	Incl. VAT
Pre-Project Investigation Cost (This is a standard cost based on the Cost Estimate Fee amount)	R 0,00	R 0,00
Estimated Capital Cost for a Standard Connection (Transmission plus Distribution) <i>(Sum of tables 1c and 1f)</i>	R 0,00	R 0,00
Estimated Capital Cost for a Premium Connection (Transmission plus Distribution) <i>(Sum of tables 1e and 1h)</i>	R 0,00	R 0,00
Total Estimated Dedicated Capital Costs	R 0,00	R 0,00

Table 1 (b) Summary of Estimated Upstream Capital Costs plus Metering

Cost Item	Excl VAT	Incl VAT
Estimated Upstream Capital Cost on the Transmission System	R 0,00	R 0,00
Estimated Upstream Capital Cost on the Distribution System	R 0,00	R 0,00
Total Estimated Upstream Capital Costs	R 0,00	R 0,00
Metering installation cost	R 0,00	R 0,00
Total Estimated Upstream Capital Costs and Metering	R 0,00	R 0,00

Table 1 (c) Estimated Capital Cost of Standard Equipment on the Distribution System (Dedicated Connection Equipment)

Cost item e.g.	Total Cost	Pro-rated %	Pro-rated Cost Excl VAT	Pro-rated Cost Incl VAT
1 Transformer			R 0,00	R 0,00
10 km 132 kV line			R 0,00	R 0,00
Protection			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (d) Estimated Capital Cost of Standard Equipment on the Distribution System (Upstream Works)

Cost item e.g.	Total Cost	Pro-rated %	Pro-rated Cost Excl VAT	Pro-rated Cost Incl VAT
1 Transformer			R 0,00	R 0,00
10 km 132 kV line			R 0,00	R 0,00
Protection			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (e) Estimated Capital Cost of Premium Equipment on the Distribution System

Cost item e.g.	Total	Pro-rated %	Cost Excl. VAT	Cost Incl. VAT
1 Transformer			R 0,00	R 0,00
10 km 400 kV line			R 0,00	R 0,00
Protection			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (f) Estimated Capital Cost of Standard Equipment on the Transmission System (Dedicated Connection Equipment)

Cost item e.g.	Total	Pro-rated %	Cost Excl. VAT	Cost Incl. VAT
1 Transformer			R 0,00	R 0,00
10 km 400 kV line			R 0,00	R 0,00
Protection			R 0,00	R 0,00
Transformation Capacity Charge			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (g) Estimated Capital Cost of Standard Equipment on the Transmission System (Upstream Works)

Cost item e.g.	Total	Pro-rated %	Cost Excl. VAT	Cost Incl. VAT
1 Transformer			R 0,00	R 0,00
10 km 400 kV line			R 0,00	R 0,00
Protection				
Transformation Capacity Charge			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (h) Estimated Capital Cost of Premium Equipment on the Transmission System

Cost item e.g.	Total	Pro-rated %	Cost Excl. VAT	Cost Incl. VAT
1 Transformer			R 0,00	R 0,00
10 km 400 kV line			R 0,00	R 0,00
Protection			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 2 Amount of estimated Capital Costs linked to each foreign currency

The Base Rates as at N/A are as follows:

Currencies:		Amount of Estimated Dedicated Capital Costs linked to each foreign currency
US Dollars / ZAR	N/A	N/A
Euro / ZAR	N/A	N/A
Canadian Dollar / ZAR	N/A	N/A
Swiss Frank / ZAR	N/A	N/A
Swedish Krone / ZAR	N/A	N/A
Japanese Yen	N/A	N/A
Commodities:		Estimated total amount of commodity
Construction Steel	N/A	N/A
Aluminum	N/A	N/A
Copper	N/A	N/A
Transformer Oil	N/A	N/A
Core steel	N/A	N/A

PART B: SELF-BUILD OPTION ELECTED BY CUSTOMER

The estimated costs associated with the Eskom Works, including escalation and overheads are as follows:

Table 1 (a) Summary of allocated estimated dedicated costs

Cost Item	Excl. VAT	Incl. VAT
Pre-Project Investigation Cost (This is a standard cost based on the Cost Estimate Fee amount)	R 100 521,74	R 115 600,00
Estimated Capital Cost for a Standard Connection <i>(Sum of tables 1c and 1f)</i>	R 28 481 121,28	R 32 753 289,48
Estimated Capital Cost for a Premium Connection <i>(Sum of tables 1e and 1h)</i>	R 0,00	R 0,00
Total Estimated Dedicated Capital Costs	R 28 581 643,02	R 32 868 889,48
Estimated Monopoly Works Cost	R 3 855 388,90	R 4 433 697,24
Total estimated dedicated costs	R 32 437 031,92	R 37 302 586,71

Table 1 (b) Summary of Estimated Upstream Capital Costs plus Metering

Cost Item	Excl VAT	Incl VAT
Estimated Upstream Capital Cost on the Transmission System	R 0,00	R 0,00
Estimated Upstream Capital Cost on the Distribution System	R 0,00	R 0,00
Total Estimated Upstream Capital Costs	R 0,00	R 0,00
Metering installation cost	R 36 419,08	R 41 881,94
Total Estimated Upstream Capital Costs and Metering	R 36 419,08	R 41 881,94

Table 1 (c) Estimated Capital Cost of Standard Equipment on the Distribution System (Dedicated Connection Equipment)

Cost item e.g.	Total Cost	Pro-rated %	Pro-rated Cost Excl VAT	Pro-rated Cost Incl VAT
Distribution Costs			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (d) Estimated Capital Cost of Standard Equipment on the Distribution System (Upstream Works)

Cost item e.g.	Total Cost	Pro-rated %	Pro-rated Cost Excl VAT	Pro-rated Cost Incl VAT
1 Transformer			R 0,00	R 0,00
10 km 132 kV line			R 0,00	R 0,00
Protection			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (e) Estimated Capital Cost of Premium Equipment on the Distribution System

Cost item e.g.	Total	Pro-rated %	Cost Excl. VAT	Cost Incl. VAT
1 Transformer			R 0,00	R 0,00
10 km 400 kV line			R 0,00	R 0,00
Protection			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (f) Estimated Capital Cost of Standard Equipment on the Transmission System (Dedicated Connection Equipment)

Cost item e.g.	Total	Pro-rated %	Cost Excl. VAT	Cost Incl. VAT
1 Transformer			R 0,00	R 0,00
10 km 400 kV line			R 0,00	R 0,00
Protection			R 0,00	R 0,00
Transformation Capacity Charge	R101 718 290,30	28%	R 28 481 121,28	R 32 753 289,48
Total			R 28 481 121,28	R 32 753 289,48

Table 1 (g) Estimated Capital Cost of Standard Equipment on the Transmission System (Upstream Works)

Cost item e.g.	Total	Pro-rated %	Cost Excl. VAT	Cost Incl. VAT
			R 0,00	R 0,00
			R 0,00	R 0,00
			R 0,00	R 0,00
Transformation Capacity Charge			R 0,00	R 0,00
Total			R 0,00	R 0,00

Table 1 (h) Estimated Capital Cost of Premium Equipment on the Transmission System

Cost item e.g.	Total	Pro-rated %	Cost Excl. VAT	Cost Incl. VAT
			R 0,00	R 0,00
			R 0,00	R 0,00
			R 0,00	R 0,00
Total			R 0,00	R 0,00

Estimated Monopoly Works Cost

Table 2 Summary of Estimated Monopoly Works Cost

Cost Item	Total	Pro-rated %	Cost (excl VAT)	Cost (incl VAT)
Estimated cost of Monopoly Works on Distribution System	R		R 3 855 388,90	R 4 433 697,24
Estimated cost of Monopoly Works on Transmission System	R		R 0,00	R 0,00
Total	R		R 3 855 388,90	R 4 433 697,24

Table 3 Amount of estimated Capital Costs linked to each foreign currency

The Base Rates as at **30 January 2020** are as follows:

Currencies:		Amount of Estimated Dedicated Capital Costs linked to each foreign currency
US Dollars / ZAR	N/A	N/A
Euro / ZAR	N/A	N/A
Canadian Dollar / ZAR	N/A	N/A
Swiss Frank / ZAR	N/A	N/A
Swedish Krone / ZAR	N/A	N/A
Japanese Yen	N/A	N/A
Commodities:		Estimated total amount of commodity
Construction Steel	N/A	N/A
Aluminum	N/A	N/A
Copper	N/A	N/A
Transformer Oil	N/A	N/A
Core steel	N/A	N/A

FINANCIAL SPECIFICATIONS

PART A: COST ESTIMATE FEE ALREADY PAID BY CUSTOMER

DATE COST ESTIMATE FEE AMOUNT PAID	Excl VAT	Incl VAT
20 June 2019	R 100 521,74	R 115 600,00

PART B: SELF-BUILD OPTION NOT ELECTED BY CUSTOMER – ESKOM BUILD

Table 1 SUMMARY OF THE CONNECTION CHARGE ESTIMATES, FEES PAYABLE UPON ACCEPTANCE OF THE COST ESTIMATE LETTER AND GUARANTEES

Connection Charge Estimate	Excl. VAT	Incl. VAT
CEF/Pre-Project Investigation Charge	R 0,00	R 0,00
Estimated Distribution Standard Connection Charge	R 0,00	R 0,00
Estimated Distribution Premium Connection Charge	R 0,00	R 0,00
Estimated Transmission Standard Connection Charge	R 0,00	R 0,00
Estimated Transmission Premium Connection Charge	R 0,00	R 0,00
SUBTOTAL: CONNECTION CHARGE ESTIMATE	R 0,00	R 0,00
Less Cost Estimate Fee (already paid)	R 0,00	R 0,00
BALANCE: CONNECTION CHARGE ESTIMATE*	R 0,00	R 0,00
FEES PAYABLE UPON ACCEPTANCE OF THE COST ESTIMATE LETTER		
Distribution Quotation Fee	R 0,00	R 0,00
Transmission Quotation Fee	R 0,00	R 0,00
Total Quotation Fee	R 0,00	R 0,00
GUARANTEES		
Use-of-System Charges Security Amount		R 0,00
Early Termination Guarantee Amount		R 0,00

PART C: SELF-BUILD OPTION ELECTED BY CUSTOMER

Table 1 SUMMARY OF THE CONNECTION CHARGE ESTIMATES, FEES PAYABLE UPON ACCEPTANCE OF THE COST ESTIMATE LETTER AND GUARANTEES

Connection Charge Estimate	Excl. VAT	Incl. VAT
CEF/Pre-Project Investigation Charge	R 100 521,74	R 115 600,00
Estimated Distribution Standard Connection Charge	R 0,00	R 0,00
Estimated Distribution Premium Connection Charge	R 0,00	R 0,00
Estimated Transmission Standard Connection Charge	R 28 481 121,28	R 32 753 289,48
Estimated Transmission Premium Connection Charge	R 0,00	R 0,00
Estimated Distribution Monopoly Works Charge	R 3 855 388,90	R 4 433 697,24
Estimated Transmission Monopoly Works Charge	R 0,00	R 0,00
SUBTOTAL: CONNECTION CHARGE ESTIMATE	R 32 437 031,92	R 37 302 586,71
Less Cost Estimate Fee (already paid)	R 100 521,74	R 115 600,00
BALANCE: CONNECTION CHARGE ESTIMATE*	R 32 336 510,18	R 37 186 986,71
FEES PAYABLE UPON ACCEPTANCE OF THE COST ESTIMATE LETTER		
Distribution Quotation Fee	R 1 872 280,00	R 2 153 122,00
Transmission Quotation Fee	R 0,00	R 0,00
Total Quotation Fee	R 1 872 280,00	R 2 153 122,00
GUARANTEES		
Use-of-System Charges Security Amount		R 2 481 871,17
Early Termination Guarantee Amount		R 41 881,94

PART D: QUOTE FACTORS

The factors to be used in the final calculation of the Connection Charges, the Early Termination Guarantee Amount and the Connection Charge Guarantee Amount are:

1. Overheads **10 %**
2. Escalation **6 %** (Production Price Index)
3. Escalation Duration **38 months**

Escalation in the cost of obtaining servitudes (costs to be based on the most recent value of the land)

USE OF SYSTEM SCHEDULE OF STANDARD PRICES FOR DISTRIBUTION CONNECTED GENERATORS [URBAN]



SCHEDULE OF STANDARD PRICES FOR ESKOM TARIFFS 1 APRIL 2019 TO 31 MARCH 2020 FOR NON-LOCAL AUTHORITY SUPPLIES, AND 1 JULY 2019 TO 30 JUNE 2020 FOR LOCAL AUTHORITY SUPPLIES

1. Standard prices

The standard prices contained in this schedule to be charged by Eskom for electricity supplied or made available by Eskom to customers, shall, subject to the provisions of the Electricity Regulation Act (Act No 4 of 2006), or its successor-in-title, be as set out hereunder.

These terms, conditions and prices contained in this schedule are the official tariffs approved by NERSA and are valid until Eskom's next price increase or tariff changes as approved by NERSA from time to time.

2. Definitions and abbreviations

2.1. Definitions

For the purpose of this Schedule the following words and phrases shall have the same meanings as assigned to them herein:

Account means the invoice received by a customer for a single **point of delivery (POD)** or if consolidated, multiple **points of delivery** for electricity supplied and/or use of the **System**.

Active energy charge or energy charge means the charge for each unit of energy consumed, typically charged for as c/kWh.

Administration charge means the daily fixed charge payable per **POD** to recover administration-related costs such as meter reading, billing and meter capital. It is based on the **monthly utilised capacity** or **maximum export capacity** of each **POD**.

Affordability subsidy charge means the transparent charge indicating socio-economic subsidies related to the supply of electricity to **residential tariffs** and is payable on Eskom related active energy sales to **non-local authority tariffs**.

Ancillary Service charge means the charge that recovers the cost of providing ancillary services by the **System Operator**.

Annual utilised capacity means the higher of the **notified maximum demand (NMD)** or the **maximum demand**, per **POD/point of supply** measured in kVA, and registered during a rolling 12-month period.

Chargeable demand means the highest average demand measured in kVA in a billing month during the chargeable time periods specified for each tariff. For WEPS, Megaflex and Megaflex Gen, the chargeable period is during these tariffs peak and standard periods and for Nightsave Urban (Large and Small) and Nightsave Rural during Nightsave's peak periods.

Code means the **Distribution Code**, the **South African Grid Code**, the **Grid Connection Code for Renewable Power Plants** or any other code, published by NERSA, as applicable, and as amended, modified, extended, replaced or re-enacted from time to time.

Distribution means the regulated business unit through which Eskom constructs, owns, operates and maintains the **Distribution System** in accordance with its licence and the **Code**.

Distribution connected means connected to the **Distribution system**.

Distribution losses charge means the production-based (energy) incentive to generators. The losses charge is based on the approved loss factors, the load factor, the amount of energy produced seasonally and TOU and the WEPS energy rate (excluding losses).

Distribution network capacity charge (previously known as the **Distribution network access charge**) means the R/kVA or R/POD fixed network charge raised to recover **Distribution** network costs and depending on the tariff is charged on the **annual utilised capacity** or **maximum export capacity** where **maximum demand** is measured or the **NMD** where **maximum demand** is not measured.

Distribution network demand charge means the R/kVA or c/kWh variable network charge raised to recover **Distribution** network costs and depending on the tariff may be charged on the **chargeable demand** or the active energy.

Distribution System means Eskom's network infrastructure consisting of assets operated at a nominal voltage of 132 kV or less, not classified as transmission transformation equipment.

Distribution use-of-system (DUoS) charges means the network tariffs charged for making capacity available, connecting to and for the use of the **Distribution System**. The **DUoS** charges are the source of the **Distribution** network charge components in the retail tariff structures.

DUoS charge (generators) means the **DUoS** charges payable by generators. These **DUoS** charges for generators comprise the **network capacity charge** based on **maximum export capacity**, the **losses charge**, the **ancillary service charge**, the **service charge** and the **administration charge**.