



APPLICATION FOR A CONNECTION
OF A GENERATOR, ENERGY
STORAGE OR HYBRID WITH
CAPACITY GREATER THAN 1MW
AND ASSOCIATED SUPPLY AT THE
SAME POINT OF SUPPLY TO THE
ESKOM NETWORK

01 October 2022

Introduction

(This form should be completed if the generator in question will be synchronised with the Eskom grid.)

This application form outlines the minimum information required by Eskom to conduct an evaluation of the feasibility of connecting a generator energy storage or hybrid facility (that will also consume from the same point of supply within Eskom's network).

This application form is in three parts.

1. Part 1 must be filled in for Eskom to provide an (non-binding) estimate of the cost of connection.
2. If the required conditions are met to proceed with a budget quotation, Eskom will request Part 2 of the application form to be completed for the detailed interconnection and power system studies.

With effect from 01 October 2013, the Eskom policy in terms of the provision of Cost Estimate Letter (CEL) has changed. A fee will be raised and is payable prior to issuing CEL to the customer, where applicable. CEL is the initial indicative cost information that is provided for customer projects. Proof of payment of the Cost Estimate Fee is required within 10 working days of submitting the application form part 1, whereafter Eskom will commence with the cost estimate studies. The invoice for payment will be issued within five (5) days of receipt of a completed application form.

All the information stipulated in this application form must be provided prior to the commencement of any work required to prepare a Cost Estimate Letter and ultimately if approved, any Budget Quotation. The technical cost of connection as well the network charges are determined for the applicant from the information supplied in this document. Technical findings and any network constraints derived from the information provided shall also be communicated to the relevant applicant.

Applicants should also note that an application for a temporary construction supply or for an increase in demand is separate from this application, and the applicant is required to follow the standard Eskom application process in such instances.

It should be noted that it is the applicant's responsibility to comply with the applicable technical, design and operational standards detailed in the South African Grid Code and the South African Distribution Network Code. Copies of the code may be downloaded from NERSA's website (www.nersa.org.za).

Eskom's specific technical requirements for the interconnection of embedded generation are described in a separate document, i.e., "Standard for the interconnection of embedded generation" (240-61268576). A copy of this standard will be provided on request. An electronic (soft copy) submission is preferred and can be submitted to the contact persons as listed in the email addresses on the next page.

The customer will be contacted to confirm receipt of his/her application and provided with a reference number.

Grid Access Unit Contacts:

Region 1	Western Cape	Mr. Are van Zyl are.vanzyl@eskom.co.za Mr. Bradley Box bradley.box@eskom.co.za Ms. Mongi Moshweshwe mongi.moshweshwe@eskom.co.za
	Eastern Cape	Ms. Tembi Plaatjie tembi.plaatjie@eskom.co.za Mr. Lazola Ndondo Lazola.ndondo@eskom.co.za
Region 2	Northern Cape	Ms. Lebohang Motai lebohang.motai@eskom.co.za Mr Mzwandile Madodonke Mzwandile.madodonke@eskom.co.za Mr Motlatsi Makhari Motlatsi.makhari@eskom.co.za
	Free State	Mr Moreetsi Balepile Moreetsi.balepile@eskom.co.za
Region 3	Gauteng	Ms. Lorato Loate lorato.loate@eskom.co.za Modikoe Mokhehe modikoe.mokhehe@eskom.co.za
	Mpumalanga	Ms. Charmaine Masehela masehec@eskom.co.za
Region 4	Northwest	Mr. Sibongo Simelane sibongo.simelane@eskom.co.za
	Kwa-Zulu Natal	Mr. Ravi Moonsamy Ravi.moonsamy@eskom.co.za
	Limpopo	Mr. Valmon Muller valmon.muller@eskom.co.za



For office use

Received by	
Date received	
Allocation of tracking GTX or project number	

Eskom application form for a generator connection

Important information:

Note 1: Eskom will provide a Cost Estimate Letter within 90 days of receiving the proof of payment of the Cost Estimate Fee and the application form where connection works are for Distribution only, and 120 days where initial studies indicate an upgrade of the Transmission network may be required to provide such a connection. This period is however influenced by each project's complexities and may be negotiated with the customer upon establishing the dependencies and amount of initial Engineering Planning that needs to be done for each project. In future pre-feasibility system impact studies may be required, prior to the submission of an application form for a CEL for facilities or multiple facilities with an installed capacity exceeding 300 MW. The following conditions should be complied with:

- Completion in full of Part 1 of the application form (if not applicable please indicate as such).
- Application form to be completed electronically and submitted in PDF form.
- Reasonable assurance of the right to develop on a proposed site, e.g., letter from landowner; and
- Proof of payment of the Cost Estimate Fee (please see Cost Estimate Fees below)

Note 2: Once the application has been submitted, Eskom may contact the customer to discuss the following:

- where should the facility be connected;
- the requirements in terms of the supply;
- grid configuration and voltages to use;
- estimated costs of connection – based on proper network configuration and equipment boundaries and details;
- grid capacity available at nearest network;
- fault levels at nearest network;
- define need to coordinate projects, determine requirements / risks for shared networks;
- any potential Eskom plans that may impact on project proposals;
- any impact (e.g., lead times) on requested timetable; and
- Eskom to determine interdependent projects in public domain (as far as possible) (liaising with EIA consultants, DEA, NERSA, etc.).

Note 3: Eskom will request Part 2 of this application form to be filled in and proceed with a budget quotation only after the following conditions have been complied with, namely:

Where the Independent Power Producer (IPP) intends to submit bids in a regulated IPP purchase programme:

- the entity responsible for procurement must first pre-qualify the application.

or

For IPP applications that do not intend to be part of a regulated bid programme:

- Budget Quote (BQ) request conditions and the payment of the quotation fee;
- A CEL cannot be accepted as only a Request for BQ can be processed. A CEL issued does NOT mean all associated Requests for BQs can be processed. Thus, the following must be met:
 1. The application caters for the generator site location and requirements to connect to the grid (as per Part 1).
 2. The Private IPP (customer not participating in any government IPP procurement programme) must also provide the End Customer wheeling information (Letter of Intent) with the application form for the required technical network check.
 3. The required grid capacity must be checked again and confirmed, before issuing the Request for BQ Invoice. (Payment into the Eskom account without an invoice will be disregarded and therefore will not give the customer any advantage)
 4. The Request for BQ fee payment has been confirmed
 5. Once meeting all four criteria above, grid capacity may be reserved for orderly BQ development.

6. To avoid hogging of limited capacity, the BQ will only be processed once criteria 1-3 has been met.
 - **Please use the “High-level Guide for Grid Capacity allocation for DER integration” – currently being finalized.**
 - Please note the request for an Eskom NSP Letter of Consent, will only be made available on request after the Request for BQ payment has been made. It will confirm that the Eskom due process is being followed and will confirm if criteria’s 1 – 3 have been met.
- Completion of Part 2 of the application form;
- Proof of land ownership/permission to use the land is obtained;
- EIA progress, i.e., appointment of EIA consultant and confirmation from DEA approving the Scoping Report or Basic Assessment Report as may be applicable; and
- Proof of reasonable viability of the proposed technology, regarding the primary energy source.

Environmental Requirements:

Statutory Approvals from all infrastructure providers and utilities are required for the building of the generation plant and associated activities. Infrastructure traversing land needs to be protected by a servitude/s registered against the Title Deed of the affected property.

To expedite the customer’s connection, the customer is advised to, as far as possible integrate the environmental impact assessment (EIA) for the generation plant with the EIA for the Eskom connection assets. Separate EIAs for the generation plant and Eskom assets need to be obtained to assist with transfer of servitudes, etc. to Eskom. The customer will be required to discuss the requirements and coordination of the EIA for the Eskom connection assets with Eskom, e.g., route selection, design, evaluation and ranking of alternatives, environmental management programme (EMPr) for the construction phase(s), and servitude conditions.

Eskom will not automatically support any customer’s application for a license to own and operate the Distribution assets, specifically those that land outside the footprint of the customer generation facility, not owned by the Customer or leased by the customer. As such, where the customer wishes to apply for and to own and operate the Distribution asset, Eskom will only process BQ requests once support for the distribution license has been obtained through Eskom Governance structures or after customer has obtained the license to own and operate the Distribution assets from NERSA

Cost Estimate Fees (2022/23 – updated annually)

The Cost Estimate Fee (CEF) is based on the Eskom employee labour rates and estimated hours to prepare a cost estimate of a certain Maximum Export Capacity (MEC). The following categories of MEC’s and fees are applicable for the provision of a CEL.

CUSTOMER SUPPLY SIZE CATERGORY	APPLICABLE COST ESTIMATE FEE
0 – 1 MVA/MW (Minor process for qualifying LV connections)	Please refer to the application form on http://www.eskom.co.za/Whatweredoing/GAU/Pages/SmallMicro.aspx
0 – 1MVA/MW (Major process)	
> 1 MVA/MW ≤10 MVA/MW (major process)	R26 052.17+VAT =R29 960.00
> 10 MVA/MW ≤50 MVA/MW (Large)	R 66 991.30 + VAT = R77 040.00
> 50 MVA/MW (Very large)	R 100 521.74 + VAT = R115 600.00
Supply (NMD/MEC) downgrades if a CEL is required	R 16 765.22 + VAT = R19 280.00
Recoverable works (Minimum charge if a CEL is required)	R 16 765.22 + VAT = R19 280.00
Short Major Process (where no CEL is issued) ¹	R 16 765.22 + VAT = R19 280.00

¹ Should a project follow the short major project route (i.e., where only the BQ is issued and no CEL is issued) then the minimum CEF of R19 280 incl. VAT will be payable. This minimum fee is charged to recover the cost of producing a budget quotation. Sometimes it is not known upfront whether the project will follow the full major or the major short process. In this case the standard CEF will be payable based on the APPLICATION FOR A GENERATOR, ENERGY STORAGE OR HYBRID FACILITY CONNECTION TO ESKOM'S NETWORK: Rev 13

Only one CEF shall be payable for both the Facility and the supply depending on the greater of the MEC or the Notified Maximum Demand (NMD). Please note that should the application for the facility and the supply not be done simultaneously, subsequent applications by the customer will be subject to a new CEF, where applicable. For avoidance of doubt a CE fee is applicable per generation facility connection. For cluster applications, each facility forming a cluster must pay the CE fee and in addition a CE fee needs to be paid for the cluster CEL application.

A facility , (as defined in Schedule 2 or the Electricity Regulations Act) , means the generation (or energy storage) located at the Site and comprising all plant, machinery and equipment, all associated buildings, structures, roads on the Site that are not national, provincial or municipal roads, and other appurtenances, together with all required interfaces to be constructed for the safe, efficient and timely operation of that facility and for the avoidance of doubt, excluding the transmission connection works or distribution connection works, as the case may be.

Once the customer has submitted the application form, an official Eskom invoice must be requested, which will have the account number against which the payment must be made and reflect the relevant Eskom bank account details for this purpose.

Applicability of a Cost Estimate Fee (CEF):

The CEF is applicable in the following instances:

- New applications
- Changes in supply capacity – existing customers
- Recoverable works
- When more than one engineering study is requested at a connection point

Where more than one connection option is presented or requested in one CEL, only one fee is payable. However, if the customer requests another connection alternative after the initial one, then an additional CEF is payable.

- Change in scope requested by the customer

A new Cost Estimate Letter will be required to be issued in cases where a customer requests a change in scope for a project after seven calendar days of payment of the original Cost Estimate Fee. A Cost Estimate Fee will be payable for the new Cost Estimate Letter that is to be issued.

- Quotation fee validity period

A new Cost Estimate Fee will be payable where the quotation fee validity period has expired, and a new Cost Estimate Letter is requested by the customer

Part 1 – Application Form

DETAILS OF APPLICANT																											
1. Application relationship	<input type="checkbox"/> Developer <input type="checkbox"/> Consultant <input type="checkbox"/> Landowner <input type="checkbox"/> Other (specify): _____																										
2. Applicant detail	<div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px;"></div>																										
3. Company registration number or ID Number	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> </tr> </table>																										
4. VAT no: (if registered)	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> </tr> </table>																										
5. Date of submission	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 25px; height: 25px;">2</td> <td style="width: 25px; height: 25px;">0</td> <td style="width: 25px; height: 25px;">Y</td> <td style="width: 25px; height: 25px;">Y</td> <td style="width: 25px; height: 25px;">M</td> <td style="width: 25px; height: 25px;">M</td> <td style="width: 25px; height: 25px;">D</td> <td style="width: 25px; height: 25px;">D</td> <td style="width: 25px; height: 25px;"></td> <td style="width: 25px; height: 25px;"></td> </tr> </table>	2	0	Y	Y	M	M	D	D																		
2	0	Y	Y	M	M	D	D																				
6. Do you intend to submit a bid in terms of a regulated procurement process (e.g., DMRE IPPPP BW 7)? Separate application forms to be submitted for regulated procurement process and others (Wheeling, Own use) For clarity, if DMRE REIPPPP is chosen and the bidder is not successful or does not bid, the CEL cannot be used to request a BQ for wheeling purposes or visa versa.	<input type="checkbox"/> YES, programme name: _____ <input type="checkbox"/> NO, select one of the following: <input type="checkbox"/> Own Use without Export <input type="checkbox"/> Own use with Export – net billing (Offset) <input type="checkbox"/> Wheeling to 3rd party <input type="checkbox"/> Other (specify) _____																										
7. Please indicate maximum no. of hours the facility may be curtailed during network constraints or for system balancing purposes.	<div style="border: 1px solid black; height: 20px; margin-bottom: 5px; text-align: center;">hours per day</div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px; text-align: center;">hours per month</div> <div style="border: 1px solid black; height: 20px; text-align: center;">hours per year</div>																										
8. 3 rd Party / Offtaker / End Customer name If End Customer is in a Municipal Network, provide Municipality Name Eskom Account Number End Customer Existing NMD End Customer New NMD (if any change) End Customer Supply Voltage End Customer Point of Connection Coordinates Land parcel description	<div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 100px;">Latitude</td> <td style="width: 25px;">S</td> <td style="width: 25px;">d</td> <td style="width: 25px;">d</td> <td style="width: 25px;">°</td> <td style="width: 25px;">m</td> <td style="width: 25px;">m</td> <td style="width: 25px;">"</td> <td style="width: 25px;">s</td> <td style="width: 25px;">s</td> <td style="width: 25px;">.</td> <td style="width: 25px;">s</td> <td style="width: 25px;">'</td> </tr> <tr> <td>Longitude</td> <td>E</td> <td>d</td> <td>d</td> <td>°</td> <td>m</td> <td>m</td> <td>"</td> <td>s</td> <td>s</td> <td>.</td> <td>s</td> <td>'</td> </tr> </table> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 20px;"></div>	Latitude	S	d	d	°	m	m	"	s	s	.	s	'	Longitude	E	d	d	°	m	m	"	s	s	.	s	'
Latitude	S	d	d	°	m	m	"	s	s	.	s	'															
Longitude	E	d	d	°	m	m	"	s	s	.	s	'															

<p style="text-align: right;">Municipality</p> <p style="text-align: right;">Province</p> <p>The End Customer wheeling intent will then form part of the Eskom NSP Letter of Consent to NERSA for Registration / Licensing application</p> <p>(Please note this should be duplicated on supporting pages for each End Customer, as applicable)</p>	<p>Confirm attachments:</p> <p><input type="checkbox"/> Include End Customer / Municipal Wheeling Letter of Intent as support</p> <p><input type="checkbox"/> Include copy of latest account as proof (excluding Municipality accounts)</p>	
<p>9. Address of the applicant</p> <p style="text-align: right;">Street no.:</p> <p style="text-align: right;">Street:</p> <p style="text-align: right;">Suburb:</p> <p style="text-align: right;">City:</p> <p style="text-align: right;">Postal Code:</p>	<div></div> <div></div> <div></div> <div></div> <div></div>	
<p>10. Postal address</p> <p style="text-align: right;">P O Box:</p> <p style="text-align: right;">City and Country:</p> <p style="text-align: right;">Postal Code:</p>	<div></div> <div></div> <div></div>	
<p>11. Address of generator</p> <p style="text-align: right;">Street:</p> <p style="text-align: right;">Land parcel description:</p> <p style="text-align: right;">Nearest Town:</p> <p style="text-align: right;">Municipality:</p> <p style="text-align: right;">Province:</p>	<div></div> <div></div> <div></div> <div></div> <div></div>	
<p>12. Details of contact person</p> <p style="text-align: right;">Name:</p> <p style="text-align: right;">Phone Number / Alternative Number:</p> <p style="text-align: right;">Cellphone Number</p> <p style="text-align: right;">Email</p>	<div></div> <div></div> <div></div> <div></div>	
<p>13. Please nominate a preferred name for this project/facility.</p> <p>Eskom will take this preferred name into consideration when determining the facility's station name but reserves the right to change it to avoid any potential for confusion with other projects or stations. Please use a single word or short name for use in databases – to avoid potential abbreviations.</p>	<div></div>	

GENERAL DETAILS																																																	
14. Generator Connection point detail:	<input type="checkbox"/> New Point <input type="checkbox"/> Existing Point																																																
15. Area of Supply within which the Generator Connection point is located:	<input type="checkbox"/> Eskom <input type="checkbox"/> Municipal <input type="checkbox"/> Other (specify): _____																																																
16. If new point, please indicate if an auxiliary supply is required?	<input type="checkbox"/> YES, specify size of supply: _____ kVA <input type="checkbox"/> NO																																																
17. If an existing Eskom point is to be used, please provide customer account number.																																																	
18. If existing Eskom point, confirm existing NMD & MEC and specify new NMD & MEC	Existing NMD: _____ kVA New NMD: _____ kVA Existing MEC _____ kW New MEC _____ kW																																																
19. Has the applicant previously had a study completed by Eskom regarding this facility?	<input type="checkbox"/> YES <input type="checkbox"/> NO																																																
20. If yes, please specify the title, date of issue and issuing department of the pre-feasibility study(s).																																																	
21. Target connection date (this date will be used for connection assessment).	<table border="1"> <tr> <td>2</td><td>0</td><td>Y</td><td>Y</td><td>M</td><td>M</td><td>D</td><td>D</td> </tr> </table>	2	0	Y	Y	M	M	D	D																																								
2	0	Y	Y	M	M	D	D																																										
22. Provide preference in terms of construction of Eskom Connection Works. Note: Each option is subject to legislative frameworks as well as Eskom's policies as applicable from time-to-time. More information can be made available on request	<input type="checkbox"/> Eskom to construct connection works – Eskom build. <input type="checkbox"/> Negotiated self-built project transferring connection assets to Eskom – Self build <input type="checkbox"/> Negotiated self-built project with developer retaining ownership of connection assets – Own build																																																
MAPS AND DIAGRAMS																																																	
23. Please indicate coordinates for on-site grid electrical connection. Use WGS84 datum coordinates in the following format: dd°mm"ss.s' (Degrees, Minutes, Seconds)	On-site Generator connection point: Latitude <table border="1"><tr><td>S</td><td>d</td><td>d</td><td>°</td><td>m</td><td>m</td><td>"</td><td>s</td><td>s</td><td>.</td><td>s</td><td>'</td></tr></table> Longitude <table border="1"><tr><td>E</td><td>d</td><td>d</td><td>°</td><td>m</td><td>m</td><td>"</td><td>s</td><td>s</td><td>.</td><td>s</td><td>'</td></tr></table> Electrical connection point (where known): Latitude <table border="1"><tr><td>S</td><td>d</td><td>d</td><td>°</td><td>m</td><td>m</td><td>"</td><td>s</td><td>s</td><td>.</td><td>s</td><td>'</td></tr></table> Longitude <table border="1"><tr><td>E</td><td>d</td><td>d</td><td>°</td><td>m</td><td>m</td><td>"</td><td>s</td><td>s</td><td>.</td><td>s</td><td>'</td></tr></table>	S	d	d	°	m	m	"	s	s	.	s	'	E	d	d	°	m	m	"	s	s	.	s	'	S	d	d	°	m	m	"	s	s	.	s	'	E	d	d	°	m	m	"	s	s	.	s	'
S	d	d	°	m	m	"	s	s	.	s	'																																						
E	d	d	°	m	m	"	s	s	.	s	'																																						
S	d	d	°	m	m	"	s	s	.	s	'																																						
E	d	d	°	m	m	"	s	s	.	s	'																																						
24. Please provide reasonable assurance of the right to develop on a proposed site, e.g., letter from landowner.																																																	

<p>25. Please provide a map, with the location of the facility, and relationship to an identifiable landmark clearly marked.</p> <p>Add the marked electrical connection clearly to the grid in map format and properties to be crossed – i.e. map showing IPP site, power line and substation and connection to grid layout, if available.</p> <p>Indicate how many land parcels are traversed by the proposed development and associated activities (the Generation site as well as the interconnecting network). Provide the farm name(s), farm number and portion number e.g. My Farm 123/0, Your Farm 124/1 (indicate multiple farm numbers as required).</p>	<p><i>If GIS shape files are available, that might be submitted as well (*.shp, *.shx, *.dbf, *.prj) Minimum file requirements might have to be listed.</i></p> <p><i>Name of map attachment (soft copy):</i></p>
<p>26. If known, please provide the name of the Eskom substation from which existing supply (if applicable), is taken. Alternatively provide the nearest pole number OR stand/minisub/RMU number for the cable network</p>	

GENERATOR TECHNICAL DATA

1) Please indicate the required reliability of the connection	<input type="checkbox"/> Non-firm / Single Supply / Standard Connection <input type="checkbox"/> Firm / Dual Supply / Premium Connection		
2) For a new plant, provide the fault current (MVA) contribution of the generating facility at the Point of Connection.	MVA		
3) Existing supply point: <ul style="list-style-type: none"> · For an existing load, provide the NMD (typically for co-generation) · If applicable, what is the new NMD as a result of this application · If an existing plant, what is the existing fault current contribution and what will the new fault current contribution be in MVA. 	Existing NMD:		MVA
	New NMD required:		MVA
	Existing Fault Current contribution:		MVA
	New Fault Current contribution:		MVA
4) Please provide details of the proposed technology type, installed capacity and MEC. Note 4 & 5: Please Note this is an application per point of connection, Multiple sites need to be addressed under a System Impact Study as part of the IPP Feasibility study. Then only the resultant individual projects are applied per CEL. The System Impact Study needs to address the phased approach in development, Transmission EHV line strengthening, Tx Supply Area limits etc. Tx to determine cut-off limit, but 500-600 MW is proposed area limit, catering for multiple developers, not this application only. Therefore, obtain Transmission System Planning input.	Technology	MEC (MW)	Installed Capacity (MW)
	Wind		
	CSP trough		
	CSP tower		
	PV		
	Concentrating PV		
	Landfill		
	Biomass		
	Biogas		
	Hydro or small Hydro		
	Coal		
	Gas		
	Other (specify)		
5) Provide the project phases/timelines. Indicate short-term and long-term MEC in MW for export capacity and Load NMD in MVA import capacity. Phasing of the project e.g. phase 1 a total of 50 MW with 1 st turbine being commissioned in 2014 and final commissioning by 2016, phase 2 a total of 100 MW with 1 st turbine being commissioned in 2016 and final commissioning by 2018. This will help to determine required network capacities and highlight potential development risks.	Year	Facility (MW)	Load (MVA)

ENERGY STORAGE/HYBRID TECHNICAL DATA**

6) Energy Storage Application	<input type="checkbox"/> Standalone Energy Storage <input type="checkbox"/> RE Generator and Energy Storage (hybrid) <input type="checkbox"/> Other hybrid (Specify):		
7) Energy Source and Capacity (for charging Energy Storage)	Import from grid:		MW
	Wind:		MW
	Photovoltaic:		MW
	Other (Specify):		MW
8) Size (Power/Energy) and technology of Energy Storage (e.g. 50MW/200MWh L-Ion Battery)	Total Import Charging:		MW
	Export Discharging:		MW
	Storage MWh:		MWh
	Storage Medium:		MW
9) Combined Facility Maximum Export Capacity (MEC) (e.g. 75 MW PV & 40 MW BESS might use MEC = 50 MW & not the sum)	MW	To be used for network thermal capacity check – Generation Scenario	
10) BESS application/use case (use “x” to select the appropriate use case(s)) (What function will be played by the Storage?)	Use Case	Select (x)	Planning Criteria
	RE Generator Output Smoothing		
	RE Generator Firming (energy shifting similar to CSP)		
	Energy support for the System Operator		
	Operating reserves (Ancillary Services) for System Operator		See Table 1 for the applicable limits
	Customer purpose (i.e. behind the metre applications such as energy arbitrage). In this case, indicate if the BESS is grid-tied or not.		If grid-tied, the charging half-cycle of the BESS must be considered when doing capacity check studies

11) Energy Storage charging (Yes / No) <i>(NB: to determine applicable criteria for capacity check when storage operates as a load)</i>	RE Generator only		BESS load to be assumed = 0MW
	Grid only		Maximum charging load of the BESS to be assumed for load scenario capacity check
	From both Renewable Energy Generator and Grid when required		Maximum charging load of the BESS to be assumed for load scenario capacity check
12) Developer to provide a single line diagram (SLD) showing connection topology for the Facility ending at the POC(s) <i>(Choose the appropriate configuration Y / N)</i>	DC Coupled Co-Located System – see Figure 1		The hybrid will be assigned a single POC <ul style="list-style-type: none"> RVC Limit = 5%
	DC Tightly Coupled Co-Located – see Figure 2		The hybrid will be assigned a single POC <ul style="list-style-type: none"> RVC Limit = 5%
	AC Coupled Co-Located – see Figure 3		The hybrid (or two plants) will be assigned a single POC <ul style="list-style-type: none"> RVC Limit = 5% Or separate POC for BESS and REG <ul style="list-style-type: none"> BESS RVC = 5% RE RCV = 3%
	Stand-alone energy storage system – see Figure 4.		<ul style="list-style-type: none"> BESS RVC = 5%

****NOTES:**

1. RVC Limits for Ancillary Services (Fast Frequency Response)

Table 1: Distribution Planning RVC limits for ancillary services support

Reserve type	Typical dispatches	RVC Limit MV (%)	RVC Limit HV (%)
Instantaneous	2/day	5	4
Regulating	300/hour	1.25	1.0
Ten minute	3/day	5	4
Supplemental	1/day	5	4

2. DC Coupled Co-Located System

The DC coupled co-located 'PV plus Storage' plant means that the renewable energy generator (PV) and the storage are physically linked on the DC side and their output is fed into a single bi-directional inverter (converter) as shown in **Figure 1** below.

In this configuration, the BESS can charge from the PV and/or from the grid.

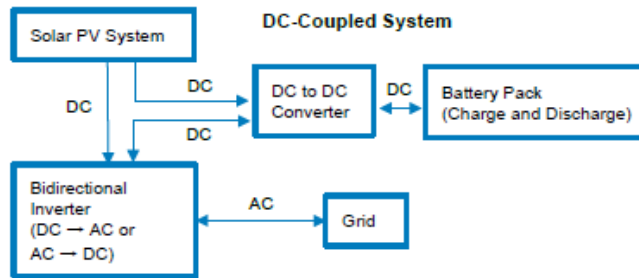


Figure 1: DC Coupled Co-located PV plus storage configuration

3. DC Tightly Coupled Co-Located

Similar to the DC coupled configuration; the tightly coupled DC configuration links to the storage to the REG on the DC side – see Figure 2.

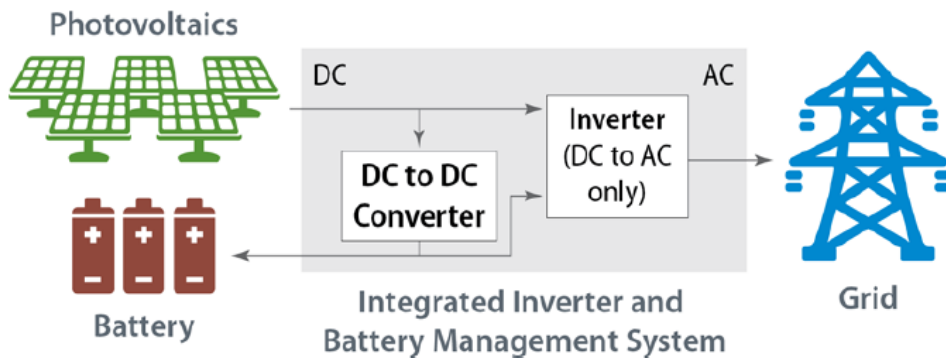


Figure 2: DC tightly coupled co-located PV plus storage configuration

It is noted that this configuration does not allow charging from the grid (reverse power flow) and thus the BESS may not be applied as a 'load dispatch' for the System Operator.

4. AC Coupled Co-Located

The AC coupled system is such that the REG feeds into a DC-AC inverter, the Storage feeds into a converter and they are both connected on the AC busbar as shown in Figure 3 below.

In this configuration,

- REG and BESS can be assigned separate POCs and they will both link at the PCC busbar. Thus, the BESS and REG will be treated as separate plants in terms of compliance studies.
- Or, the developer can opt to link the BESS and REG “behind the meter” and the hybrid will be assigned a single POC.

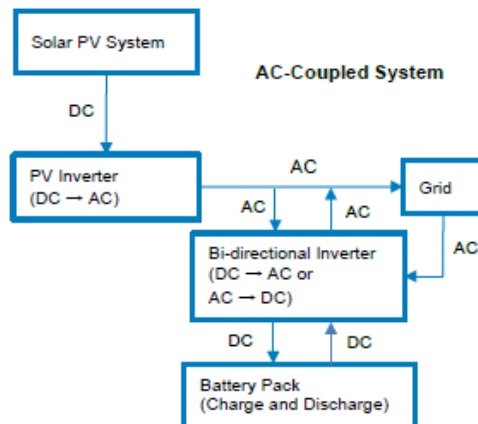


Figure 3: AC Coupled Co-located PV plus storage configuration

Part 2 – Project Form

Eskom will contact the customer to request this section of the application form to be completed once all the required conditions are fulfilled. This section is to be completed in order for Eskom to proceed with a Budget Quotation.

ENVIRONMENTAL INFORMATION	
13) Is a waste license required and if so, what is the status of the application?	
14) Is an emissions license required and if so, what is the status of the application?	
15) Is an integrated water use license required and if so, what is the status of the application?	
16) Are there appeals and/or legal reviews against any environmental authorisation? If so, what is the status?	
17) Does the EIA application include all associated activities including one for the power line connection to the Eskom grid? (State all listed activities applied for.)	
18) If EIA and/or other environmental authorisations (waste, water, and air quality) have been initiated, please provide name of environmental consultant.	
19) Provide proof of landowner consent, to avoid requests for duplicate quotations on same land or very close proximity.	
20) Highlight potential risks of project, e.g., wetlands, proximity to airports, mining activities, prospecting licences, etc.	

SITE DATA			
21) Has agreement been reached between the applicant and all registered landowners affected by the proposed development and associated activities?			
22) Provide a site plan in an appropriate scale. This site plan should indicate: <ul style="list-style-type: none"> a) The proposed location of the connection point and associated activities, (normally at the HV bushings of the grid connected transformer) b) Generators c) Transformers d) Site buildings e) Electrical diagram of the above including any backup generators <i>Name of site plan attachment (soft copy):</i>			
23) Does your proposed development impact on any existing infrastructure such as utilities, telecommunications, rail, roads, and water? Please specify.			
PROJECT PHASES			
24) Provide the updated project phases / timelines. Indicate short-term and long-term MEC in MW for export capacity and Load NMD in MVA import capacity. Phasing of the project e.g., phase 1 a total of 50 MW with 1st turbine being commissioned in 2023 and final commissioning by 2024, phase 2 a total of 100 MW with 1st turbine being commissioned in 2024 and final commissioning by 2026. This will help to determine required network capacities and highlight potential development risks. Differentiate between CEL applications and System Impact Studies.	Year	Facility (MW)	Load (MVA)
CONSTRUCTION SUPPLY REQUIREMENTS			
25) Provide details of construction supply requirements in kVA, voltage, and location. Please note that a separate electrical supply application will be required in this regard.			