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Description of Request	Procurement of the Dx Commercial Energy Trader (including Virtual Wheeling) solution – IT00641
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1. High level background

The high-level scope of work for the Distribution Commercial Energy Trader (Dx CET) project involves establishing a hybrid/cloud comprehensive energy trading platform system for Eskom Distribution. This platform must include functionalities such as Virtual Wheeling and be compatible with existing systems, including SAP and MDMS, while also being adaptable to future systems. The platform will integrate demand forecasting, energy procurement, commercial clearance, metering verification, and energy and financial settlement functionalities. The successful vendor will also be required to provide support and maintenance for a minimum of five years after project handover.

The Virtual Wheeling solution will facilitate energy delivery from non-Eskom generators to buyers, enhancing grid stability and accommodating decentralized energy generation. The solution must support implementation, transition, and migration, with provisions for adjusting volumes and accommodating technology changes during the contract term. The project aims to ensure reliable energy supply, optimize trading strategies, and promote sustainability and efficiency in energy trading. Additionally, vendors will be required to perform or demonstrate their product to the customer based on the outcome of the gatekeepers' requirements.

2. Scope of work/Business requirements

Eskom Distribution is evolving to meet customer needs and regulatory changes, focusing on renewable energy procurement and security of supply. Eskom Distribution aim to establish a Distribution Commercial Energy Trader (CET) capability, integrating demand forecasting, energy procurement, commercial clearance, metering verification, and energy and financial settlement. This project includes Virtual Wheeling, allowing energy delivery from non-Eskom generators to buyers.


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The solution must support implementation, transition, and migration, with provisions for adjusting volumes and accommodating technology changes during the contract term. Virtual Wheeling will aggregate energy data for refunds or credits, supporting various allocation options. Failure to implement this project could lead to power interruptions and technical challenges due to high self-generation by customers. A comprehensive solution is needed to enable commercial energy trading and ensure reliable energy supply through various system functionalities.

The following are included in the scope

- i Functional requirements¹
- ii Reporting Requirements
- iii Architecture services
- iv Data Migration
- v Support and maintenance (5 years after solution deployment)
- vi Disaster Recovery
- vii Integration Business Service API activities to expose/consume and test Services to/from the Eskom Integration Services Bus. Eskom will be responsible for the development of the Integration Services to/from the bus to the internal systems.
- viii Additionally, the tenderer must provide the following as part of the solution:
 - Detailed physical architecture designs.
 - System development and configuration
 - Unit Testing
 - The tenderer's team is expected to contribute and participate in the different testing preparations and executions; namely:
 - ❖ Training
 - ❖ Solution deployment
 - ❖ System stabilisation
 - ❖ System support (5 years)
- ix The scope excludes the following
 - ❖ All testing except unit testing. The tenderer's team is expected to contribute and participate in the testing preparations and executions.

¹ Scope of Work Annexure A & B

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- ❖ Integration messages from the Eskom integration bus to Eskom's systems.
- ❖ Support and Maintenance of the Eskom Integration Services

Dx Commercial Energy Trading System-High level requirements

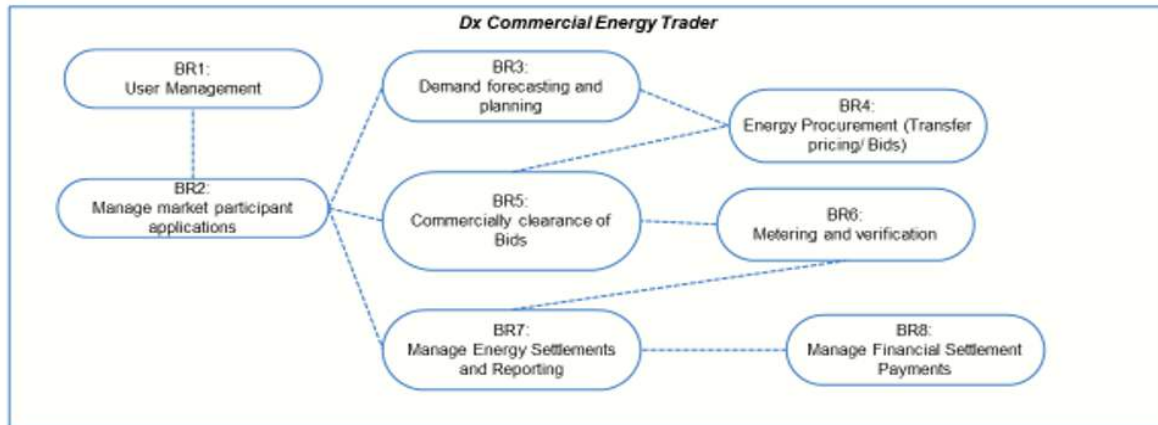


Figure 1: Dx Commercial Energy Trading System-High level requirements

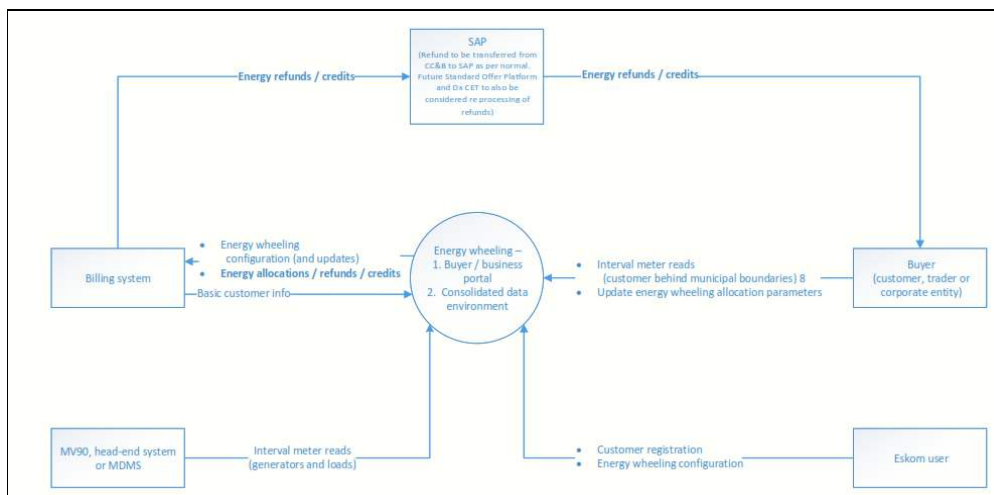



Figure 2: Virtual Wheeling data flow diagram – Energy refunds / credits via the billing system & SAP

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2.1. Commercial Energy Trader (CET) Business requirements functionalities²

The table below must be read in conjunction with scope of work Annexure B.

Functionality grouping	BRS Number	Functionality	Business Rule No and Description
User Management	BR1	Manage user access to the Distribution (Dx) Commercial Energy Trading (CET) system considering both Eskom internal users and external market participant users.	RR1.1: When user profile change or market participant contract expire revoke user access.
Market participant applications	BR2	Manage the market participant service/ product offering applications per category by assessing and approving/ rejecting the application.	RR2.1: When a market participant application is rejected allow the editing of the application within 20 working days before automatic system cancellation.
Forecasting and planning	BR3	Perform energy forecasting and demand planning for Dx CET. Considering various variables: e.g., national, regional and local needs, planned/ unplanned maintenance/ outages, network constraints and weather patterns.	RR3.1: Forecasting durations: Short term = Day ahead Medium term = Week ahead Long term = Month ahead up to a year ahead.
Energy procurement (Bidding/ Transfer pricing)	BR4	Market participants access Dx CET system and submit bids for approved products and services according to published forecasted planning.	BR4.1: (BF2) Quantify rules for systematically evaluating and ranking the bids received against the planned forecasting. (Price and Volumes) BR4.2: (BF3) Quantifying the rules to systematically consolidate and aggregate the bids received against the planned forecasting? (Merit orders)
Commercially clearance of bids received	BR5	Analyse and clear bids received in the energy trading landscape determining the following: a. Impact of bids received against planned budgets, b. the products and services on offer and expenditure against them, improvement opportunities, pre-qualification requirements and interfacing, existing needs considering pricing/ markets and flexible services, settlements and defaulting reasons.	
Manage metering and validation	BR6	Consolidate and validate metering for all market participants according to their respective contractual agreements in preparation to settle account agreements.	
Manage energy settlements and reporting	BR7	Compute financial energy settlements. Validate and manage trade reports, adjustments, exceptions and notifications to market participants to provide accurate invoicing.	
Manage settlement payments	BR8	Manage the consolidated settlement payments process until proof of payment (remittance) received by market participants. Updated data will be required for future budgeting and improvement of the processes.	

Table 1: Dx CET business requirements functionalities

² [Scope of Work Annexure B Detailed requirements - Dx CET - v0](#) – section 2

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2.2 Virtual Wheeling Business requirements functionalities³

The table below must be read in conjunction with the scope of work Annexure A

Functionality grouping	BRS Number	Functionality
A. Consolidated wheeling data environment	F01	<p>Ability to store (source) data:</p> <ol style="list-style-type: none"> Interval meter read data: <ul style="list-style-type: none"> Generators Eskom customers (including municipalities) Customers behind municipal boundaries - directly Basic customer information from the billing system: <ul style="list-style-type: none"> Persons, accounts, service agreements, service agreement-service point (containing start meter reads) and premises. Detailed bill i.e., detailed bill line items Business areas: <ul style="list-style-type: none"> Wires perspective: Clusters, operating units, zones, sectors and customer network centres. Retail perspective: Clusters, operating units, service areas Data for alerts to be used for display and possibly applying business rules to wheeling refund / credit calculations. <ul style="list-style-type: none"> Examples: low / no sales, outstanding debt (exclude off-takers in debt). Basic customer information for customers beyond municipal boundaries <ul style="list-style-type: none"> Persons (customers), meters, premise address. Energy wheeling configuration <ul style="list-style-type: none"> Contracted energy wheeling configuration Contracted energy wheeling configuration history Wheeled energy refunds / credits <p>Note:</p> <ol style="list-style-type: none"> Data source frequency and retention: <ul style="list-style-type: none"> Storage of data: <ul style="list-style-type: none"> 5 years Eskom data update frequency: <ul style="list-style-type: none"> Monthly initially, perhaps more frequent in future e.g., hourly. Only data for registered buyers (and associated data e.g., accounts, premises and meters etc.) to be stored. Data source for interval meter read data could be MV90, the head-end system, the billing system or the future meter data management system (MDMS). <p>Precondition: All recorder data for both generators and off takers to be available.</p> <ul style="list-style-type: none"> Direct Eskom customers and customers beyond the municipal boundaries.

³ [Scope of Work Annexure A Detailed requirements - VW - v0](#)

Functionality grouping	BRS Number	Functionality
A. Consolidated wheeling data environment	F02	<p>Calculate wheeled energy refunds / credits:</p> <ul style="list-style-type: none"> - Ability to calculate wheeled energy allocations and refunds / credits for configured <u>qualifying customer accounts</u> (or municipal customers) using available interval meter read data. - Ability to calculate consolidated wheeled energy allocations and refunds / credits for a large customer with many customer premises i.e., single refund / credit for all customer premises. <p>Note:</p> <p>Wheeled energy allocation and refund / credit is calculated:</p> <ul style="list-style-type: none"> - per TOU period (aggregated per month) for generators and customer premises involved in the energy wheeling contract. - based on the selected / configured wheeling allocation and financial crediting options.
A. Consolidated wheeling data environment	F03	<p>Ability to retain a history of wheeled energy refunds / credits per buyer (premise or consolidated account):</p> <ul style="list-style-type: none"> - Data retention for Eskom audit perspective - minimum 5 years
A. Consolidated wheeling data environment	F04	<p>Transfer wheeled energy refunds / credits to the billing system:</p> <ul style="list-style-type: none"> - Ability to transfer calculated energy allocations and refunds / credits to the billing system for further processing e.g., for refunds to the buyer (customer, trader or corporate entity) via Systems Applications and Products (SAP). <p>Note:</p> <ul style="list-style-type: none"> - Once wheeled energy refunds / credits are in the billing system it should be transferred from to SAP as per normal. Future Standard Offer Platform and Distribution Commercial Energy Trader (Dx CET) to also be considered re processing of refunds.
A. Consolidated wheeling data environment	F05	<p>Transfer energy wheeling configuration (or configuration changes) to the billing system:</p> <ul style="list-style-type: none"> - Ability to transfer energy wheeling configuration to the billing system: <ul style="list-style-type: none"> o Association / link between generators and off takers e.g., via accounts, service agreements, premises or meters o Association / link between consolidated accounts for buyers (corporate entities or traders) and their load accounts o Wheeling allocation option - percentage / amount of wheeled energy allocation per generator / off taker o Financial crediting option - Transfer changes to the energy wheeling configuration to the billing system as and when they happen.
A. Consolidated wheeling data environment	F06	<p>Receive and process information from other data aggregators / platforms:</p> <ul style="list-style-type: none"> - Ability to received and process information from other data aggregators e.g., large customers or market traders.
B. Buyer / business web portal	F07	<p>Provide buyer / business web portal for all wheeling related activities e.g., registration of users and associated meters, creating energy wheeling configurations, uploading of meter read data (where applicable), viewing of dashboards and reports etc.</p> <ul style="list-style-type: none"> - Buyer / business wheeling web portal to use data from the “consolidated wheeling data environment”.


Functionality grouping	BRS Number	Functionality
B. Buyer / business web portal	F08	<p>Buyer / business web portal landing page:</p> <ol style="list-style-type: none"> For buyers: starting point or filter → customer, premise (or municipal customers), account, meter, generator or group of customers (for traders or corporate entities) <ul style="list-style-type: none"> Basic customer information Customer energy wheeling configuration <ul style="list-style-type: none"> E.g., generators and customer premise allocation % Summary of bills, energy wheeled, energy offset (credited), energy bought by Eskom etc. <ul style="list-style-type: none"> Current month detail Recent trends → for the past year Contact information for any customer billing queries etc. Eskom: starting point or filter → customer, premise (or municipal customers), account, meter, generator or business area: <ul style="list-style-type: none"> Management view: <ul style="list-style-type: none"> High-level summary of number of accounts, number of customer premises, bills, energy wheeled, energy offset (credited), energy bought by Eskom etc. <ul style="list-style-type: none"> Current month detail Recent trends → for the past year User view: <ul style="list-style-type: none"> User task orientated views e.g., outstanding tasks or alerts and high-level summary of claims for their business area.
B. Buyer / business web portal	F09	<p>Ability for users (or Eskom application support) to configure / customize the buyer / business web portal landing page for the applicable types of users e.g., Eskom management, Eskom user and buyers.</p> <ul style="list-style-type: none"> Configure default web portal landing pages per user type - by Eskom application support. Allow Eskom management, Eskom users or buyers to configure the web portal landing page according to their preferences (starting from the default web portal landing page applicable to their user type). Allow users to reset the web portal landing page to the default or any other configured web portal landing page template.
B. Buyer / business web portal	F10	<p>Ability to register users:</p> <ul style="list-style-type: none"> Registration / access to the buyer / business web portal to be granted by Eskom. <p>Note:</p> <ul style="list-style-type: none"> Buyers (customers, traders or corporate entities) to only view information and provide configuration parameters changes and interval meter read data inputs (for customers behind the municipal boundaries ⁴) at scheduled dates.
B. Buyer / business web portal	F11	<p>Ability to register data associated with buyers e.g., accounts, premises and meters:</p> <ul style="list-style-type: none"> Formally register (make available) new data in the “consolidated wheeling data environment”, including data submitted by external parties.

⁴ Related to or has some reference to wheeling directly to customers behind municipal boundaries.


Functionality grouping	BRS Number	Functionality
B. Buyer / business web portal	F12	<p>Provide access control for buyers and Eskom users:</p> <ul style="list-style-type: none"> - Ability to create users for buyers and Eskom users. - Ability to create user profiles e.g., <ul style="list-style-type: none"> o View relevant allocated buyer and energy information. o Edit relevant energy wheeling configuration parameters. o Upload relevant buyer interval meter read data. o Create / apply energy wheeling configurations. o View relevant dashboards, views or reports. o Etc. - Ability to apply user profiles to users. <p>Limit access:</p> <ul style="list-style-type: none"> - Ability to grant a buyer access to only buyer's own data and energy wheeling configuration. - Ability to grant Eskom users access to a selection of customer accounts by ring-fencing individual based on: <ul style="list-style-type: none"> o A selection of accounts e.g., for a customer executive o Accounts in a certain business area e.g., per OU o Etc.
B. Buyer / business web portal	F13	<p>Allow registration of more than one registered user per buyer.</p> <ul style="list-style-type: none"> - Eskom to provide buyer user registration limit
B. Buyer / business web portal	F14	<p>Create / apply energy wheeling configuration:</p> <ul style="list-style-type: none"> - Ability to create / apply energy wheeling configurations. - Provide a simple association / link between generators and off takers e.g., via accounts, service agreements, premises or meters. - An energy wheeling configuration should minimally have: <ul style="list-style-type: none"> o Association / link between generators and off takers e.g., via accounts, service agreements, premises or meters o Association / link between consolidated accounts for buyers (corporate entities or traders) and their load accounts o Wheeling allocation option - percentage / amount of wheeled energy allocation per generator / off taker o Financial refund / credit option
B. Buyer / business web portal	F15	<p>Create / apply energy wheeling configuration – in bulk / batches:</p> <ul style="list-style-type: none"> - Ability to create / apply energy wheeling configurations in bulk. <p>Note:</p> <ul style="list-style-type: none"> - Possibly use a bulk configuration file that can be imported into the buyer / business wheeling web portal.
B. Buyer / business web portal	F16	<p>Create / apply energy wheeling configuration:</p> <p><i>For wheeling directly to customers behind municipal boundaries</i></p> <ul style="list-style-type: none"> - Ability to create / apply energy wheeling configurations. <ul style="list-style-type: none"> o Associate these customers with other existing Eskom customers and generators.

Functionality grouping	BRS Number	Functionality
B. Buyer / business web portal	F17	<p>Create / apply energy wheeling configuration – in bulk / batches: <i>For wheeling directly to customers behind municipal boundaries</i></p> <ul style="list-style-type: none"> - Ability to create / apply energy wheeling configurations in bulk. For example, add customers from behind municipal boundaries to the Eskom internal customers already configured and sourced from the billing system. <p>Note:</p> <ul style="list-style-type: none"> - Possibly use a bulk configuration file that can be imported into the buyer / business wheeling web portal.
B. Buyer / business web portal	F18	<p>Allow buyers to allocate the calculated energy wheeling credit / refunds to a list of accounts.</p> <ul style="list-style-type: none"> - Allow buyers to submit a list of accounts to allocate refunds / credits to. - Accounts for buyer refund / credit allocation to be transferred to CC&B and allocated as directed. <p>Note:</p> <ul style="list-style-type: none"> - Applicable to customers with large volumes of accounts.
B. Buyer / business web portal	F19	<p>Retain energy wheeling configuration history:</p> <ul style="list-style-type: none"> - Ability to maintain a history of energy wheeling configuration changes e.g., changes to off takers per generator or percentage allocation per off taker
B. Buyer / business web portal	F20	<p>Buyer submission of interval meter read data: <i>For wheeling directly to customers behind municipal boundaries</i></p> <ul style="list-style-type: none"> - Ability to accept and process buyer submission of interval meter read data <u>for customers behind municipal boundaries</u>. - Ability to upload interval meter read data in bulk for multiple buyers. - Where possible, provide automated acquisition of interval meter read data. - Ability for buyer to delete erroneous interval meter read data. - Include a legal / notice re interval meter read data submission impact and liability. - Ability to verify interval data received. <ul style="list-style-type: none"> o Ability for Eskom staff to reject buyer submitted data and provide reasons for rejection. <p>Note:</p> <ul style="list-style-type: none"> - Eskom to advise re limitations on volumes of data and format. - Buyers to be provided with meter read data submission template. <p>Precondition: Business to provide applicable wording of legal notice re interval meter read data submission impact and liability.</p> <ul style="list-style-type: none"> - Notice to be displayed in buyer / business web portal.
B. Buyer / business web portal	F21	<p>Buyer submission of energy wheeling allocation parameters:</p> <ul style="list-style-type: none"> - Ability for buyers to configure the <u>percentage / amount of wheeled energy allocation per generator and customer premises</u>. - Include notification for buyer to confirm changes to the energy wheeling configuration, which is essentially a change to the customer contract with Eskom. - Ability for Eskom staff to approve changes to the wheeling configuration.

Functionality grouping	BRS Number	Functionality
B. Buyer / business web portal	F22	<p>Enforce buyer information submission "hard cut-off dates":</p> <ul style="list-style-type: none"> - Ability to enforce hard cut-off dates by which: <ul style="list-style-type: none"> o Buyers are expected to change energy wheeling allocation parameters. o Customers behind municipal boundaries are expected to upload relevant interval meter read data. <p>Note:</p> <ul style="list-style-type: none"> - Hard cut-off date → date when reconciliation of accounts will be started.
B. Buyer / business web portal	F23	<p>Enable buyer customer-interaction:</p> <ul style="list-style-type: none"> - Provide links to established channels, e.g., call centres etc. for customer-interaction. <p>Precondition: Business to provide full listing of customer contact channels.</p>
B. Buyer / business web portal	F24	<p>Ability to configure business rules to identify accounts that qualify for wheeling:</p> <ul style="list-style-type: none"> - Allow Eskom application support to configure business rules to identify accounts that qualify for wheeling e.g., a certain amount of debt or timing of wheeling refund / credit claim. Business rules may consider other parameters like type of customer and type of wheeling etc.
B. Buyer / business web portal	F25	<p>Ability to export data:</p> <ul style="list-style-type: none"> - Ability for buyers to do a limited export of data e.g., interval meter reads, basic customer information and energy wheeling configuration. - Ability to export data for multiple accounts or groups of accounts. - Limitations on data export: <ul style="list-style-type: none"> o Volume: Eskom Group IT to advise re workable limits <p>Note:</p> <ul style="list-style-type: none"> - Buyers should only have access to their own data.
B. Buyer / business web portal	F26	<p>Buyer / business user alerts:</p> <ul style="list-style-type: none"> - Ability to provide user alerts re timing of customer data or configuration submissions e.g., send notifications to buyer / business users 5, 3 and 1 day prior to data submission deadlines etc. <ul style="list-style-type: none"> o Example: "Acct_id: Customer wheeling parameter submission for due on 5 Dec 2022." - Ability to display relevant alerts from the billing system. <ul style="list-style-type: none"> o Examples: low / no sales, outstanding debt - Automate user alerts using the following channels: <ul style="list-style-type: none"> o SMS, email - Alerts to appear on the landing page (after login). - Alerts to appear on landing page or sent to user only for the relevant accounts a user has access to. - Allow users to subscribe to relevant alerts per account. - For users subscribed to alerts on multiple accounts, emailed alert information to be sent in Excel format e.g., a table of alerts for all subscribed accounts. <p>Preconditions:</p> <ul style="list-style-type: none"> - Business to provide alerts from the billing system for use / display in the buyer / business energy web portal: <ul style="list-style-type: none"> o Data for alerts to be used for display and possibly applying business rules to wheeling refund / credit calculations. o Examples: low / no sales, outstanding debt. - Business to provide full listing of buyer / business web portal alerts: <ul style="list-style-type: none"> o Example: "Acct_id: Customer wheeling parameter submission for due on 5 Dec 2022."


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B. Buyer / business web portal	F27	<p>Ability to set up automated validation business rules that are processed before energy wheeling refund / credit approval:</p> <ul style="list-style-type: none"> - Eskom to provide relevant business rules.
B. Buyer / business web portal	F28	<p>Ability for Eskom users to validate and approve energy wheeling refund / credit:</p> <ul style="list-style-type: none"> - Relevant Eskom user to validate and approve (proceed to refund / credit) energy wheeling refund / credit before financial processing. - Validations of energy wheeling refund / credit: <ul style="list-style-type: none"> o Some validations may be automated. - Approvals of energy wheeling refund / credit: <ul style="list-style-type: none"> o Approvals to be manually done by Eskom staff. o Scenarios for automation of approvals to be considered later. <p>Note:</p> <ul style="list-style-type: none"> - Eskom to confirm appropriate validations.
E. Reporting / Analytics	F29	<p>Dashboards, reports or views – <u>buyer / business web portal:</u></p> <ol style="list-style-type: none"> 1. <u>For buyers: starting point or filter → customer, premise, meter, account, generator or group of customers (for traders or corporate entities)</u> <ul style="list-style-type: none"> o Monthly trend view <ul style="list-style-type: none"> ▪ Generators and wheeled energy allocation ▪ Key measures: <ul style="list-style-type: none"> • Number of accounts, service agreements, premises and generators • Energy offset, energy banked, energy wheeled (qualifying claimed, non-qualifying claimed), energy bought by Eskom, total energy. <ul style="list-style-type: none"> o Include rand values of the above o Detail view (per month) <ul style="list-style-type: none"> ▪ Generator and wheeled energy allocation per customer premise ▪ Basic customer information ▪ Energy wheeling configuration per customer premise ▪ Key measures: <ul style="list-style-type: none"> • Energy offset, energy wheeled (qualifying claimed, non-qualifying claimed), energy bought by Eskom, total energy. <ul style="list-style-type: none"> o Include rand values of the above o Raw data view <ul style="list-style-type: none"> ▪ Basic customer information ▪ Interval meter reads o Energy wheeling configuration - detail <ul style="list-style-type: none"> ▪ Energy wheeling configuration per customer premise 2. <u>For Eskom users:</u> <ul style="list-style-type: none"> o As per above for customers <u>starting point or filter → customer, premise, account, meter, generator or business area:</u> <ul style="list-style-type: none"> ▪ Monthly trend view ▪ Detail view (per month) ▪ Raw data view ▪ Energy wheeling configuration – detail ▪ Task views – e.g., outstanding user tasks, alerts etc. o Management views <ul style="list-style-type: none"> ▪ Changes to configurations / allocations ▪ Late submissions of data or changes to configurations / allocations ▪ Alerts e.g., outstanding debt, no sales etc

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Functionality grouping	BRS Number	Functionality
E. Reporting / Analytics	F30	<p>Ability to customize existing and create new analytics dashboards – <u>buyer / business portal:</u></p> <ul style="list-style-type: none"> - Ability to create new analytics dashboards using the underlying data. - Ability to customize existing analytics dashboards. <p>Using:</p> <ul style="list-style-type: none"> o Visual field / entity “drag and drop” functionality for general use. o SQL (structured query language) or a similar method for more advanced users.
E. Reporting / Analytics	F31	<p>Ability to customize existing and create new reports – <u>buyer / business web portal:</u></p> <ul style="list-style-type: none"> - Ability to create new reports using the underlying data. - Ability to customize existing reports. <p>Using:</p> <ul style="list-style-type: none"> o Visual field / entity “drag and drop” functionality for general use. o SQL (structured query language) or a similar method for more advanced users.
E. Reporting / Analytics	F32	<p>Provide “near” real-time analytics / reports – <u>buyer / business web portal:</u></p> <ul style="list-style-type: none"> - Access to fresh data and fast queries for faster decision-making, automated intelligence and time-sensitive interventions.
F. Other	F33	<p>Ensure compliance to standards:</p> <ul style="list-style-type: none"> - NRS 049 part 5-2: Automatic exchange of formal metering information between systems

Table 2: VW business requirements

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2.3 Reporting / Analytics

2.3.1 VW⁵

Refer to Annexure A – F29-F32


2.3.2 Dx CET⁶

For more details refer to Annexure B

Nr	Report Name	Functionality	Define business objective being supported	Define KPI being measured
BR1	User access report	Manage Eskom and Market participants user access reports	Facilitate future energy competitive industry. Modernise the power system.	Number of active/inactive users Number of revoked users
BR2	Market participant applications	Manage list of products/ services the market participants can apply to provide with updated status of contracted agreements. Flexible services data base.	Facilitate future energy competitive industry. Modernise the power system.	Filter according to market participant/ flexible service/ active/ inactive market participant. Applications received in a specified period, number of approved/ rejected application. List of commissioned products and services.
BR3	Energy forecasting reports	Manage energy planning and forecasting reports with long medium- and short-term views	Facilitate future energy competitive industry. Modernise the power system.	Published Long, medium, short term as well as real time forecasting of energy needs with possible confidence levels.
BR4	Energy procurement reports	Manage list of product/ service bids received on total spectrum of flexible services. Report on successfully confirmed contractual agreements.	Facilitate future energy competitive industry. Modernise the power system.	Actual versus planned bids received per products/ service over the total flexible service spectrum.


⁵ Scope of Works Annexure A section 2 BRS number: F29-F32

⁶ Scope of Works Annexure B – section 3.1

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Nr	Report Name	Functionality	Define business objective being supported	Define KPI being measured
BR5	Commercial clearance of bids	<p>Analysis reports on available bids forecasting impact on company bottom line (Compare actual versus budget)</p> <p>Data analysis reports for continual improvement</p> <p>Analysis reports on existing needs (Pricing/ Market/ Flexible services)</p> <p>Settlement versus contracted agreement reports</p>	<p>Facilitate future competitive energy industry.</p> <p>Modernise the power system.</p>	Actual versus budget expenditure for each flexible service/product provided.
BR6	Metering and data validation	<p>Reports on contracted metering consumption data</p> <p>Actual versus contracted energy reports</p> <p>Exception and adjustment reports</p>	<p>Facilitate future competitive energy industry.</p> <p>Modernise the power system.</p>	<p>Actual consolidated metering data</p> <p>Exceptions on consumption exceeding a specified percentage above/below planned delivery. (KWh)</p>
BR7	Energy settlement reporting	<p>Trading reports</p> <p>Exception and adjustment reports</p> <p>Market participant notification reports</p>	<p>Facilitate future competitive energy industry.</p> <p>Modernise the power system.</p>	Financials around energy settlement exceptions e.g., Rand value of actual versus planned energy sales/
BR8	Financial settlement reports	<p>Reports comparing valid tax invoices received against invoices processed and proof of payment (remittance advices)</p> <p>Time duration reports displaying duration between notification for valid tax invoice, invoice received date, payment processed date and payment date.</p> <p>Budget versus actual reports per business area (e.g., Dx/ OU/ Zone/ Sector/ CNC/ Substation/ Feeder) and market participant.</p>	<p>Facilitate future competitive energy industry.</p> <p>Modernise the power system.</p>	Financials comparing tax invoices received versus confirmed payments made. Filtering reports according to M&O meta data structures and

Table 3: Dx CET reporting/analytics

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1.4 Architecture Services Requirements (Detailed Architecture Design)

The primary objective is to define and design the architectural components critical for the successful implementation of the solution. The tenderer is required to deliver solution architecture services for this project, making sure that they secure approval from the Enterprise Architecture committee before moving forward with the build (Physical Architecture Design or PAD) and again prior to the go-live stage (Pre-Transfer). The tenderer must ensure that ample time is allocated for refining requirements and conducting functional design workshops, as well as for crafting detailed physical designs that encompass all necessary configurations.

Additionally, the tenderer must create and develop detailed physical architecture designs based on the user requirement specifications, best practices and Enterprise Architecture design guidelines and requirements provided as part of this RFP. The scope of the architecture work includes the following key areas.

1.4.1.1 Data Architecture Scope


- i. Define the data architecture, including data modelling, storage, retrieval, and data flow diagrams.
- ii. Design data schemas, considering scalability, data integrity, and performance optimization.
- iii. Recommend appropriate database technologies and data storage solutions based on project requirements.

Resource Requirement: Experienced Data/Information Architects & System Analysts

Deliverable: Data architecture documentation and diagrams

1.4.1.2 Solution Architecture Scope

- i Engage and collaborate with stakeholders to gain an understanding of both functional and non-functional requirements.
- ii Provide a comprehensive solution architecture that outlines the application's components, their interactions, and the overall system behaviour.

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- iii Identify key software modules, frameworks, and technologies required for the proposed solution.
- iv Provide clear guidelines for the design and development of each module, ensuring alignment with project goals and objectives.

Resource Requirement: Experienced Solution Architect(s)

Deliverable: Solution architecture documentation and diagrams.

1.4.1.3 Technical Architecture Scope

This section outlines the technical infrastructure essential for the deployment and operation of the application.


- i. Recommend and specify hardware specifications, configurations, network, and cloud infrastructure configurations where applicable, to ensure scalability, availability, and performance.
- ii. Specify software development tools, frameworks, and best practices to be used by the development team.
- iii. Collaborate with internal technical stakeholders.
- iv. Address technical constraints, including latency, bandwidth, and system compatibility.

Resource Requirement: Experienced Technical Architect(s)

Deliverable: Technical architecture documentation and infrastructure specifications.

1.4.1.4 Architecture Deliverables

- i. Design workshops with business stakeholders to clarify and define in detail business, functional and implementation requirements.
- ii. Comprehensive documentation for each architecture domain (Data, Solution, Technical, Security, Integration), including diagrams, flowcharts, and textual descriptions as outlined above.
- iii. High-level presentations to key stakeholder explaining the architecture rationale, design decisions, and benefits.

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- iv. Collaborative sessions and design workshops with the development team to clarify and define in detail non-functional requirements and architectural concepts, and address implementation challenges.
- v. Detailed physical architecture design and Pretransfer documents.
- vi. All documents and diagrams to be submitted as digital editable copies (MS Office, MS Visio or ARIS)

1.4.1.5 Communication


Regular update meetings will be held to discuss architecture deliverable progress, address concerns, and ensure alignment with project goals.

1.4.1.6 Deliverable Acceptance Criteria

- i. The architecture work will be considered successfully completed upon support/approval of the architecture documentation by both Enterprise Architecture and project stakeholders.
- ii. The tender is expected to facilitate review and approval of the design as required by Eskom methodology and governance. A lead time of at least two weeks needs to be provided for in the timelines to allow for review and approval processes.
- iii. Detailed design approved by Enterprise Architecture Advisory Board (EAAB)
- iv. Development environment ready for Build/ Configuration according to the architecture approvals

1.4.1.7 Build and deploy

- i. Provide test cases, provide unit testing evidence, once all the necessary testing is complete, testing reports are produced, all governance approvals are obtained, the solution will need to be deployed to production. The Tenderer must articulate clearly as part of the response the implementation and deploy approach.
- ii. Update requirements traceability matrix. Ensure all environments are updated following successful test conclusions. Compile a go-live plan

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and ensure the solution obtains the necessary governance approvals as follows:

- a. Enterprise Architecture Advisory Board (EAAB) for pre-transfer, Change Review Management Committee (CRMC), Go/No-Go pack and decision by Group IT General Manager.

2. Integration Requirements

The Dx Commercial Energy Trading to be procured is intended to interface with the following systems. Please be aware that the Eskom Integration team will do the integration activities. The successful bidder is required to do the business services development to communicate to the other systems. **Figure 2** below represent the Dx CET work package scope diagram with integrated services. The application must have the capability of secure communication when exposing the services via the business services.

System Integration	Information exchanged	Purpose of integration
SAP FI	Debtor aging - Dx CET	
Dx CET	Sales Order - SAP FI AD	
Dx CET	User Authentication - AD	
Dx CET	Trading Schedules - POWI	Sends trading schedules from the Dx
SAP FI	Payment - Dx CET	
CC&B	Tariff - Dx CET	
POWI	Trading Schedules - Dx CET	Receives the trading schedules from the Tx Market Operator
CC&B	Person Detail - Dx CET	
Dx CET	email - MS Exchange	
SAP HCM	Person Details - Dx CET	Re-use existing integration message for person details to provide employee information


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Table 4: System Integration with the new solution

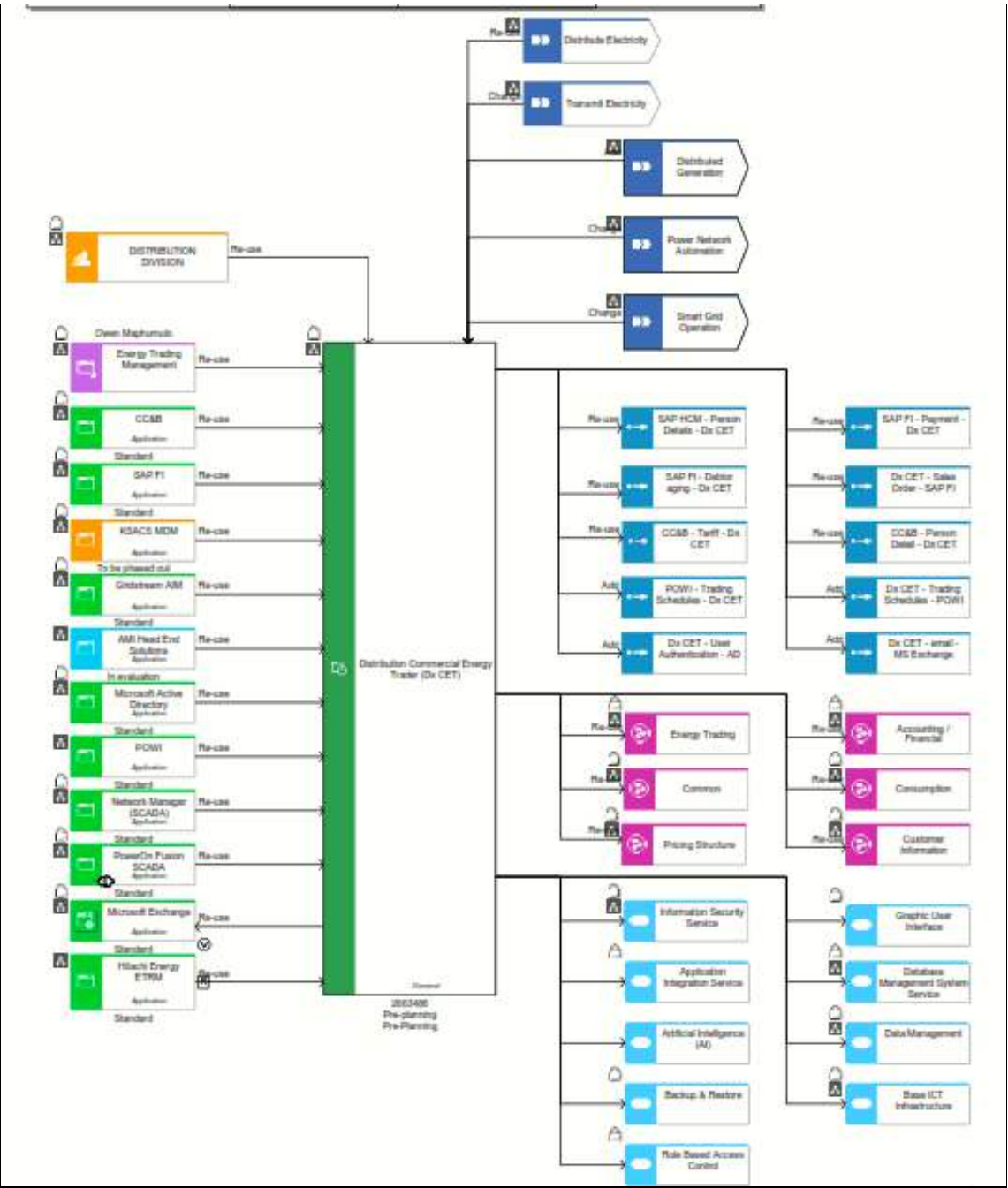



Figure 3: Distribution Commercial Energy Trader (dx CET) (Work Package Scope Diagram)

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Additionally, the tenderer must:


- i. Provide the required detail to the Eskom Integration Team to enable the design of the end-to-end solution and work closely with Eskom's Integration team.
- ii. Provide input and contribute to the Analysis, Design, Message Modelling, Unit testing, SIT testing, UAT testing and Non-Functional testing.
- iii. Provide Application Business Services that conform to the specific security and Integration standards.
- iv. Provide Application Business Services that can receive an Integration reply with a full-service response (pre-defined message structure) in case the Application is invoking an Integration Web Service.
- v. Provide Application Business Services that can communicate via One-Way or Two-Way certificate (SSL/TLS) to secure the channel.
- vi. Provide Application Business Services that support Basic Authentication for Web Services, Database or SFTP for Authentication security.
- vii. Provide Application Business Service with the capability to distinguish between Technical and Business error and handle each one in a separate manner.

3. Testing Requirements

The solution will undergo comprehensive testing following Eskom's standards to ensure its completeness and authenticity. The testing team is responsible for gathering testing requirements, creating test cases, and executing the tests to thoroughly evaluate the solution for deployment within Eskom's IT environment.

Please note that the following:

- i. All testing, except unit testing, will be carried out by the Eskom testing team. The tenderer is responsible for conducting unit testing.
- ii. All testing (including unit testing) must be performed within Eskom's test management systems, such as Application Lifecycle Management (ALM), LoadRunner (for performance testing), and Unified Functional

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Tester (UFT). The implementation team must coordinate with the testing team to ensure sufficient time is allocated for testing, and that all testing activities are incorporated into the project schedule.

- iii. Before the official test cycle begins, the development team must provide unit test results, adhering to the entry and exit criteria outlined in the master system test plan. A signed-off test closure report is required before making any test milestone as complete.


The following tests and milestones must be completed:

- i **Unit Testing (Development Environment):** Results provided by the tenderer's development team.
- ii **System Integration Testing & Functionality Testing (QA Environment):** This includes end-to-end functional testing and integration testing, ensuring the solution works with other systems and meets all requirements. The Eskom testing team will lead and execute this testing, while the tenderer's team must provide necessary inputs.
- iii **User Acceptance Testing (Pre-Prod Environment):** Facilitated by the testing team but executed by Eskom's customer/business team to verify that the system meets the requirements defined in the BRS for completeness and authenticity.
- iv **Non-Functional/Performance Testing (Pre-Prod Environment):** Led and executed by the performance tester.
- v **Disaster Recovery Testing (for the on-premise option).** Led and executed by the Disaster recovery team.

4.1 Security Requirements


The following are security requirements for the Dx CET System:

- a. External Third-Party Attestation Reports (Note: SOC reports are only applicable to Cloud Services such as SaaS, PaaS, and IaaS, not systems hosted on Eskom's Azure tenant/virtual private cloud (VPC) and on-prem on the Eskom corporate local area network (LAN)/business information network (BIN): SOC 1 Type II and SOC 2 Type II is an attestation standard put forth by the Auditing Standards Board of the American Institute of Certified Public


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Accountants (AICPA) that addresses engagements undertaken by a service auditor for reporting on controls at organizations that provide cloud services to user entities. The Cloud Service Provider (CSP) shall:

- i) For all cloud services that store and process financial information and personal identifiable information (PII) including intellectual property (IP), the CSP shall have a valid Service Organisation Control (SOC) 1 and SOC 2 Type II reports, such attestation reports shall be submitted to Eskom for review.
 - ii) Up to once per period of twelve (12) months, the CSP will provide comprehensive summaries of its latest SOC 2 report at no cost upon Eskom's written request.
 - iii) if the SOC Reports indicate any deficiencies or matters requiring attention, the CSP shall use commercially reasonable efforts to address all such items without any costs to the Eskom.
 - iv) Subject to Section 1.b, if vendor's reporting cycle is not aligned with the financial year, and/or the SOC report is older than six (6) months, the CSP shall submit a bridge letter to the Eskom at no cost, and such bridging letter shall not cover a period exceeding three (3) months.
- b. The Dx CET System shall be able to integrate with existing Eskom's MS (Microsoft) on-prem active directory (AD), Identity (MDI), MS Entra ID, and Multi Factor Authentication (MFA) to enable Single sign-on (SSO).
 - c. Role base access control (RBAC) shall be employed.
 - d. Data at rest (using AES-256), in use and in transit or in motion (using TLS 1.2, or later version) shall be encrypted.
 - e. Audit trails, logs, user administration and user activity logs shall be enabled, encrypted, and securely kept with limited access to administrators.
 - f. Sensitive information such as personal identifiable information (PII) data in development environment shall be marked.
 - g. Incremental daily back-ups shall be done, encrypted, and securely kept offsite.
 - h. Real-time data synchronization or data replication to a secondary or disaster recovery (DR) site, located in different regions shall be employed.

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- i. Disaster Recovery Plan (DRP) shall be defined, annually tested and such DRP test results shall be submitted to the Eskom Cyber Security team.
- j. Back up Restore Plan and Procedure shall be defined, annually tested and such test results shall be shared with the Eskom Cyber Security team.
- k. Patch Management Process shall be defined. The software updates and patches shall be tested on non-production environment prior being deployed into production environment.
- l. The static application security test (SAST), dynamic application security test (DAST), vulnerability assessment and penetration test shall be conducted prior deploying the cloud system and on-prem system to production environment, all critical, high, and medium vulnerabilities shall be addressed prior deploying production environment, and the summary of the test results shall be submitted to the Eskom Cybersecurity team for review and acceptance.
- m. The Supplier shall comply with applicable privacy and protection of personal information Acts such as GDPR in European Union (EU) and POPIA in South Africa (SA) where the cloud service is hosted, and the region where the data subjects are physically located.
- n. The Supplier shall notify Eskom immediately or within 24 hours when any cyber security breach has occurred. Although the GDPR and the South African Cybercrimes Act 19 of 2020 states that the notification shall be sent within 72 hours, Eskom shall be notified sooner to allow Eskom to notify the information regulator and take necessary actions to minimize the impact on Eskom.
- o. The Supplier shall notify Eskom within one (1) month if there are any significant changes to the business, platform and hosting service provider or any change that could have an impact the security assessment conducted and the auditor's opinion on the SOC audit.
- p. The database shall be placed within Eskom corporate local area network (LAN)/business information network (BIN) network (if hosted on premise) and partner private network (If hosted in the cloud) behind the perimeter firewall.


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- q. Database Security tools shall be employed to provide regulatory compliance, encryption, key management, granular access controls, flexible data masking, comprehensive activity monitoring, and sophisticated auditing capabilities.
- r. Distributed Denial of Service (DDoS) protection mechanism shall be employed for all databases.
- s. Web Application Firewall (WAF) for all internet facing applications and/or web-based applications shall be employed.
- t. The Dx CET System shall support the prevailing enterprise services bus (ESB), application programmable interfaces (API's) and Integration Platform as a Service (iPaaS) platforms for security, logging and monitoring for both on-prem, hybrid-cloud and multi-cloud environments such as IBM App Connect, TIBCO Cloud Integration (including Business Works and Scribe), WSO2 Carbon, Software AG web Methods, Neuron ESB, Apache Camel, WebSphere Message Broker, RSSBus Connect, Azure Service Bus and Oracle Service Bus, Salesforce MuleSoft, IBM DataPower, Oracle API Platform, Cyclr, Dream Factory JDBC, Microsoft SQL Server Integration Services (SSIS), SAS Data Integration Studio, Integration Adaptor DirXML, Oracle X AI Services, SAP Business Process Automation, SAP NetWeaver, Oracle Fusion Middleware, Connect Direct, HP Data Protector, WINSCP, FreeFileSync, SAP PI/PO, SAP CPI, HP SOA Systinet, JCAPS, Cloud Pak for Data, K2, Microsoft Power Automate and Zapier but not limited to these listed.
- u. The Dx CET System shall provide e-Discovery capability to identify, collect and produce electronically stored information (ESI) in response to a request for production in a lawsuit or investigation as part of the cloud services offered.

4.2 Licence Management for Maintenance and Support

The tenderer must provide the following for each option proposed:


4.2.1 SaaS solution with RSA hosting and processing

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- i 50 user licenses and 10 Group IT support licenses are required. The solution components and versions are to be used across all Eskom environments (i.e., Architecture Detailed Designs, Development, Testing, Disaster Recovery, Pre-production, and Production).
- ii The ability to only be charged for development licenses during the development of the solution.
- iii Provision of development, testing and pre-production environments.
- iv 24 X7 and 99.9% availability of all services including redundancy.
- v Operational monitoring of the Dx CET solution to be integrated with Eskom's monitoring operations.
- vi 3 months support for system stabilisation post implementation.
- vii 5 years support contract post implementation.
- viii Disaster Recovery of the services.

4.2.2 On-premises solution

- i 50 user licenses and 10 Group IT support licenses are required. The solution components and versions are to be used across all Eskom environments (i.e., Architecture Detailed Designs, Development, Testing, Disaster Recovery, Pre-production, and Production).
- ii The ability to only be charged for development licenses during the development of the solution.
- iii Provision of development, testing and pre-production environments.
- iv 24 X7 and 99.9% availability of all services including redundancy.
- v Operational monitoring of the Dx CET solution to be integrated with Eskom's monitoring operations.
- vi 3 months support for system stabilisation post implementation.
- vii 5 years support contract post implementation.
- viii Disaster Recovery of the services.
- ix Eskom will be responsible for the provisioning of the hardware as well as the operating and database licenses. The tenderer must provide the detailed specifications of the hardware and software (operating system, database and application). This must include Disaster Recovery.
- x Training for future system developments and upgrades.

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4.2.3 Disaster Recovery Requirements⁷

The disaster recovery requirements for both the commercial energy trading and virtual wheeling solutions emphasize the necessity for robust, continuous system availability and data integrity. Both systems must ensure zero data loss and maintain operational continuity 24/7/365, given their critical roles in energy trading and distribution. Disaster recovery plans must aim for zero data loss and a recovery time objective of eight hours, ensuring the system's resilience and reliability.


This entails implementing redundancy measures to guarantee system uptime and scheduling maintenance during off-peak periods to minimize disruptions. Additionally, a comprehensive disaster recovery plan must be in place, detailing consistent actions to be taken before, during, and after a disaster to swiftly recover and protect the IT infrastructure, ensuring that business operations can resume within short period. This plan should include regular backups, failover mechanisms, and periodic testing to validate the effectiveness of the recovery procedures.

4.2.4 Business Continuity Requirements⁸

The business continuity requirements for both the commercial energy trading and virtual wheeling solutions emphasize the need for robust planning and preparation to ensure uninterrupted operations during serious incidents or disasters. This includes maintaining a consolidated data environment with a retention period of at least five years and ensuring data availability 24/7/365. The system must support automated processes for energy wheeling configurations, refunds, and credits, with capabilities for bulk data handling and integration with existing systems like MV90, MDMS, and SAP. Additionally, the solution should enforce strict access controls, provide user alerts, and comply with legal standards such as the POPI Act to protect customer information. Disaster recovery plans must aim for zero data loss and a recovery time objective of eight hours, ensuring the system's resilience and reliability.

⁷ Business Requirements Specification; ([CET](#) & [VW](#))

⁸ Business Requirements Specification; ([CET](#) & [VW](#))

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4. **Implementation phase**


The implementation of the Distribution Commercial Energy Trader (Dx CET) platform shall involve developing and deploying the system with all required functionalities, ensuring seamless integration with existing systems such as SAP HR, MV90, MDMS, CC&B, and others. The transition phase will focus on planning and executing a smooth shift from current processes to the new Dx CET platform, accompanied by comprehensive training and support to ensure users are proficient in utilizing the new system. During the migration phase, historical data from existing systems will be transferred to the Dx CET platform, with a strong emphasis on maintaining data integrity and accuracy throughout the process.

Additionally, the contract should include provisions for technology upgrades and changes during the contract term. This encompasses regular updates to the platform to incorporate new features and improvements, adaptation to new regulatory requirements and market conditions, and the integration of emerging technologies to enhance platform capabilities and performance. By addressing these requirements, the Dx CET initiative aims to create a robust and efficient energy trading platform that supports Eskom's strategic objectives and enhances its operational capabilities.

5. **Training/Transfer of skills**

To ensure effective implementation and operation of the Commercial Energy Trading (CET) solution, including Virtual Wheeling, a Vendor will be required to provide comprehensive training program. This program will cover various aspects of the CET system, focusing on both theoretical knowledge and practical skills. The training components include an introduction to commercial energy trading, covering energy trading principles, market dynamics, and regulatory frameworks over two days for 20 participants.

Such training shall include detailed training on virtual wheeling concepts, operational procedures, and technical requirements over three days for 15 participants. System hands-on training will be required for the users which must cover the demand forecasting, energy procurement, metering verification, and settlement functions over

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five days for 25 participants. Additionally, training on advanced metering infrastructure and real-time data analytics will be required over three days for 15 participants, and mobile application usage training will be conducted over one day for 20 participants.

Finally, risk management in energy trading hall be provided covered over two days for 10 participants, focusing on strategies for managing market, credit, and operational risks. The total training duration will be 16 days, delivered through a combination of classroom-based instruction, hands-on workshops, and online modules by experienced professionals with expertise in energy trading, virtual wheeling, and system management.


The tenderer must provide the following:

a. Training during implementation

- i Provide a separate training environment that reflects the to-be production environment
- ii Compile and provide a training strategy will be for all stakeholders. The type of training required will be based on the impact on business processes human resources.
- iii Provide customised training material that incorporates Eskom's processes for the solution. Training material content is to be placed on Eskom Learner portal and needs to conform to the Eskom learning centre standards.
- iv Provide onsite classroom-based, and web-based training for end-users and system support staff on a pre-booked basis.

b. Training after implementation

- i Mentor Eskom resources through the installation, configuration and deployment stages using a defined skills transfer program.
- ii Transfer skills and Knowledge to 10 (Ten) Group IT Support Resources, who will be providing first level support.


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- Identified Information technology (IT) support staff to be trained on the solution, especially where integration is implemented with existing / other Eskom enterprise solutions.
 - Backend training for support staff and administrators
- iii. Provide Twenty (20) working days once-off training (for the duration of the contract) to at least Fifty (50) system Super-users from ESCAP, Eskom, and associated companies; and Ten (10) Technical Support staff from Group IT

6. IT Standards

The tenderer is to ensure adherence to Eskom architectural standards as far as possible and where applicable. The following base ICT standards apply – refer to especially the grey shaded standards below:

Integration	End interface points, whether consuming or providing, needs to be done in a secure fashion. Eskom standard is Oracle Fusion and IBM DataPower Gateway underlying the present Enterprise Integration Platform/ Service Bus.
Authentication	<ul style="list-style-type: none"> • MS Active Directory • Azure AD
Server virtualisation	<p>It is expected that the solution should be able to run in a virtualised environment. Clear motivation and reasons will have to be provided where it is not possible.</p> <p>Current Standards of on-premises environment:</p> <ul style="list-style-type: none"> - VMware vSphere 7 or higher, <p>PowerVM (RISC) (only exceptional cases shall be supported)</p>
Storage virtualization	Ability to be hosted behind an SVC
Database	<ul style="list-style-type: none"> • MS SQL 2022 or higher • IBM DB@ V11.5 or higher • Others, any DB not listed above will be treated as an exception
Server OS	<ul style="list-style-type: none"> • Microsoft Windows Server 2022 64bit • SuSe Linux SLES 15

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	<ul style="list-style-type: none"> AIX 7
Client OS	<ul style="list-style-type: none"> Windows 10 or higher
Browser	<ul style="list-style-type: none"> MS Edge Mozilla FireFox V60 or higher Others (will be treated as exceptions)
Load Balancer (ADM)	<ul style="list-style-type: none"> F5 Viprion
Backup	<ul style="list-style-type: none"> NetBackup
Communication Protocol	<ul style="list-style-type: none"> TCP/IP
Desktop/Laptop specifications	<ul style="list-style-type: none"> Provide the minimum applicable specifications for a user desktop or laptop


Table 1: Group IT's standards

7. Safety

The tenderer's resources are expected to work on site at prescribed Eskom's offices. Therefore, the resources will be required to consult with the Occupational Health and Safety Practitioner to adhere to Safety, Health, and Environmental (SHE) requirements which are mandatory.

8. Service Level Agreement requirements

The vendor is required to provide 24/7 monitoring of the environment to ensure continuous system availability and performance. The response times for addressing issues are categorized by severity levels: Severity 1 (Critical) issues must be responded to within 1 hour, with 90% of calls answered within 1 hour. Severity 2 (Major), Severity 3 (Minor), and Severity 4 (Low) issues also require a response within 3 hours, maintaining the same 90% call answer rate within 1 hour. Resolution times are defined as follows: Severity 1 issues should be resolved within 24 hours, with 85% resolved within 3 business days; Severity 2 issues within 5 business days; Severity 3 issues within 1 month; and Severity 4 issues within 2 months.

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Severity categories are defined by the impact on business operations, ranging from critical defects causing system errors and data loss (Severity 1) to minor defects that do not impair usability (Severity 4). Escalation procedures are in place for Severity 1 and 2 issues if not resolved within the specified time, ensuring immediate attention and continuous updates. Service credits are applicable for Severity 1 and 2 issues if response or resolution times are exceeded, with specific monetary penalties outlined. No service credits are available for Severity 3 and 4 issues.

9. Approvals:

End user / requestor:	Name:	Humphrey Maliavusa
	Designation:	Project Manager
	Date:	12 March 2025
	Signature:	
Senior Manager:	Name:	Anthenia Phuku
	Designation:	Senior Manager: BSDS
	Date:	12/03/2025
	Signature:	