**CLARIFICATIONS ON TECHNICAL ISSUES RAISED IN THE PRE-BID MEETING OF 23RD FEBRUARY 2024**

**220/66KV WERU SUBSTATION**

1. **Bus bar material**

MOOSE cables with CICADA droppers

1. **Transformer Rating**

Transformer rating for 220/66tkV weru sub station is 45MVA, 220/66kV

1. **Provision of tertiary windings in the 45MVA, 220/66kV Weru substation Transformer**

The tertiary windings for the 11kv output and subsequent auxiliary transformer for provision of AC for indoor equipment will not be necessary. Instead bus bus SSVT of 66/0.4kV, 3No X 50kVA shall be installed at the 66kV busbar. That shall require an additional disconnector with earth switch as per the revised drawing (SLD) attached.

1. **Fault level Current**

All the substation designs to be based on a fault level current 40kA

1. **Position of CT and breaker in the SLDs to be revised as in the revised drawings attached**
2. **Substation Name**

The substation to be named Weru Baolala Substation

1. **Circuit Breaker specifications (Operation mode)**

The Circuit breakers shall be all Ganged type

**GALANA KULALU 66/33KV SUBSTATION.**

1. **The step down transformer Vector group**

The Vector Group, for both 45, 220/66kV and 23MVA, 66/33kV transformers shall be **YNynd11d0**, with a tertiary delta winding for eliminating harmonics

1. **LV protection for transformer**

To provide OC (Overcurrent) and EF (Earth Fault) relays for transformer LV protection.

1. **The auxiliary transformer rating**

The auxiliary transformer rating for LV switchgear is rated 100kVA, 33/0.415kV

**FOR LOT 2 & 3**

1. **Wayleaves acquisition and compensation for damages is not part of the project scope–** REREC will acquire wayleaves for the powerline corridor and address any claim for compensation for crop damages that may occur during line survey and during line construction.
2. **ITT 1.1 for Lot 2 and Lot 3** the scope should read Construction of 27km in 66kV single circuit line instead of Construction of 29km in 66kV single circuit line. The scope in the material requirement remains as is in the schedules.
3. **ITT 22.1** the Bank Guarantee for Lot 2 and Lot 3 has been revised to KShs 2,050,000.00 for each lot
4. **Contractors Equipment** – In addition to the detailed contractor’s equipment, the bidder should demonstrate access to equipment capable of drilling holes for poles in rocky terrain.
5. The contractor shall provide additional **10No. 66kV surge diverters each** for both Lot 1 and Lot 2.

**CONTRACTORS VISITING SITE ON THEIR OWN AT THEIR EXPENSE**

Contractors cannot be allowed to make visits to site on their own because of Authorizations, security and safety issues related to an energized. Substation

The scope of site visit especially for Weru 220/66kV substation involved access to the control building and all the indoor equipment/ Panels under joint supervision of REREC, KPLC and KETRACO Engineers.

The multi-Sectorial team may not be available for a single prospective bidder.

**REVISED DRAWINGS**

See attached revised drawings for both Weu and Galana Kulalu Substations

**CIVIL AND MECHANICAL WORKS SPECIFICATIONS**

Attached is the general specifications/ requirement for Civil and mechanical works for both Weru 220/66kV and Galana Kulalu 66/33kV substations.

Take notice of the requirements for **Control Room Building**

**RESPONSES TO QUERRIES RAISED BY PROSPECTING BIDDERS FOR GALANA KULALU FSP**

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| **Item No.** | **REREC Reference document/Clause** | **Bidder Query** | **REREC Response** |
| 1. | ITT 1.1 , ITT 37.6 Page 37 of the Bid Document | The no of maximum lots to be awarded ITT 1.1 states two (2) lots while ITT 37.6 states Tender shall only be awarded one lot and clause 2.1 page 37. | Bidders can quote for all the Four (4) lots however a bidder shall only be awarded one Lot |
| 2. | 4.1 General Experience & 4.2 (a) Specific Experience period for 5 years | Requirement is Experience in Energy sector for the last 5 years. Since Covid period fewer project were implemented  We request that the period be for the last 10 years | The Corporation has adjusted to Eight (8) years to cater for Covid pandemic period |
| 3. | Specific Experience requirement 4.2 (b) for Lot 2 & 3. | Stated that the bidder must have done 66KV and Above,  This requirement will lock out many bidder since we have few 66kV line executed in Kenya.  We request that the requirement to be changed to 33/11kV and above. | The provision in the bid document providing for experience in construction of 66kV line still remains. |
| 4. | Price Schedule 3 for Lot 2 & 3 | Route survey & wayleave acquisition.  During site visit it was stated that wayleave acquisition is the Employer’s responsibility.  Kindly clarify that we need note to price the wayleave services | Wayleave acquisition remains the employers responsibility and remains so. |
| 5. | Proposed Key Personnel for Lot 2 & 3 Surveyor. | The no required is 2 surveyor  We proposed this to be 1 Surveyor | One surveyor per lot is the requirement. |
| 6. | Warranty period validity | Kindly state the period equipment warranty. | Refer to specifications documents of the respective equipment |
| 7. | Request for Extension. | In order to offer a responsive bid we do hereby request for extension of 4 weeks from the tender closing date. | The tender closing date has been extended to 28th March 2024 and this notice is available on the REREC website (addendum 001). |
| 8. | Telecom | The tender talks about Telecom but doesn’t provide a clear BOQ or GTP. | This will be guided by IEC standards and protocols. |
| 9. | LOT 1: 220/66 KV SUBSTATION AT WERU | Modification of Existing SCADA, RTU/Telecom panel with all required communication interfaces - What make is the existing SCADA/RTU at site? Please provide the existing cards if it is an ABB brand RTU.). Share existing SAS Architecture.  Is there any metering panel to be installed in Weru Substation?  66kV BB Protection panel - 1 (based on SLD) not in BOQ. | All prospective bidders attended a mandatory site visit and this was clarified on site. They had access to the control room and the entire substation at Weru. |
| 10. | LOT 4: 66/33V SUBSTATION AT GALANA KULALU FARM | Substation Control and Management system (SCMS) - Is this a new SAS? If yes, what components are required e.g RTU, Workstation, GPS clock, etc)? Any redundancy? Please provide a simplified architecture for reference. What are the minimum DI, DO and Analog Inputs required for the RTU?  SCADA telecommunication system (between substation and RCC/NCC)  Based On OPGW - No GTP provided for this part. | This shall be guided by IEC standards and protocols. |
| 11. | LOT 4-SPECIFICATIONS AND CLIENTS REQUIREMENT-23MVA 66KV SUBSTATION AND-33KV METERING | First the specification mentioned about PLC link between Weru SS and Galana Kulalu SS.  Single Line diagram for Galana Kulalu (not provided) showing the remotes and number of circuits could give us a better understanding | The link shall be SDH and not PLC  This has been provided in the addendum 001 and is available on the REREC website |
| 12. | Lot 1& 4 | For 33 kV Circuit Breaker please kindly specify the medium of interruption required (i.e Vacuum or SF6)  Kindly share technical data schedules and technical details to be referred for 66 kV LOT 4 equipment’s. | SF6 shall be used as per the specifications  Kindly refer to the KPLC specifications attached. |
| 13. | Price Schedule: - 23 MVA, 66/33 kV Power Transformer Dyn1+RTCC complete Specification: - 23MVA ONAN 66/33kV, +/- 8% x 1.67%, Dyn11, OLTC | In price Schedule Vector group for power transformer is given as Dyn1, whereas in specification it is mentioned as Dyn11. Tap changing method for Power transformer in Price schedule is given RTCC, whereas in specification it is mentioned OLTC. Please confirm which is to be followed.  As per Specification the Cooling method for transformer is given as ONAN for 23 MVA. MVA rating for ONAF is not given. Kindly Confirm | The Vector Group, for both 45, 220/66kV and 23MVA, 66/33kV transformers shall be **YNynd11d0**, with a tertiary delta winding for eliminating harmonics  OLTC shall be applied  The specifications are ONAN/ONAF, 2No. 23MVA, 66/33kV and 45MVA, 220/66kV transformers. |
| 14. | Lot 4 Price Schedule: - 66kV BCT Current transformers 6 nos. quantity | BCT current transformers and quantity not mentioned in specification. Kindly Confirm. | Refer to Current transformer specifications and also in addendum 001 on the REREC website. |
| 15. | Price Schedule: - Auxiliary transformer 50 kVA, 3-phase,33/0.433 kV, Dyn11 with HV fuse protection 2 nos. Specification: - 1 (one) 33/0.433 kV auxiliary transformer, 50 kVA, Dyn11 with built on low voltage fuses. The transformers shall be installed outdoor | A per clause no. 8.1.5 of Specification only 1 nos. of Auxiliary Transformer with low voltage fuses is to be consider, whereas in price schedule 2 No. of HV Fuse protection is considered. Please confirm which is to be followed. | Required is 1No. 100kVA, 33/0.420kV transformer complete with accessories. |
| 16. | Lot 4, Price Schedule: - 66 kV Surge Arresters complete with surge counter & earth leakage meter. (9 nos.) | As per price schedule 9 nos. of 66kV of Surge arresters are considered for 66kV bay, whereas in specification clause no. 8.1.4.5 there is mentioned lighting arrester erected close to HV side of transformer but there is no mention of Surge arrester for 66kV Line in clause no. 8.1.3.1 of 66kV switchgear outdoor. Please confirm. | Please refer to the SLD diagram and the price schedule |
| 17. | Lot 4 Price Schedule: - sockets to be installed at 900mm above finished floor level | As per clause 5.1.1.6.8 it is given sockets to be installed above 300mm finished floor level. Please confirm. | Should be 300mm above the finished floor. |
| 18. | Lot 1 66kV No of bay contradict | As per clause no 1.2.1, 1 no of 66kV Transformer bay, 1 no of 66kV line bay & 1 no of 66kV busbar is in scope of work. However, as per Tender SLD, 24.02.05 WERU SUBSTATION SLD-Model, 1 no of 66kV Transformer bay, 2 No. of 66kV line bay & 1 no of 66kV busbar is in scope of work. It is contradicted. Please confirm actual scope of work. | Required is 2No. 66kV feeder bays |
| 19. | Lot 1 - Particular Technical Specifications – 2. Open Terminal Switchgear 2.2.1. Circuit Breaker | Circuit breaker monitoring system shall provide continuous on line monitoring of the CB by integrating the sensors at the CB and it shall be able to communicate with the central OLM system through the substation OLM data concentrator or otherwise. It shall be able to communicate with available communication protocols at REREC and IEC 61850. Contractor shall integrate the same to the REREC OLM system  Please Clarify is 220KV, 66KV & 33KV circuit breaker to be offered with CB Monitoring Device? | All Circuit breakers shall have Online monitoring feature |
| 20. | Lot 1 - Price Schedule, Schedule No.1, Item No. 15 | 220KV Neutral Current-1 Set  Please Clarify is meaning of 1 Set in BOQ is for Three-Phase requirement? Does 1 Set CT mean 3 CTs for Three Phases? Also, please provide: CT Ratio, Core Wise Details, Burden, Accuracy Class. | One (1) set is treated as 1No complete with accessories for item No 15.  We provided CTs in terms of numbers. Refer to the BOQ and schedule of prices  Lot 1: **CT rations for 220kV are;**   * Core 1: 400-200/1A 5P20, 50VA * Core 2: 400-200/1A 5P 0.5, 50 VA * Core 3: 400-200/1A 5P20, 50 VA * Core 4: 400-200/1A Class PX, PK 500V * Core 5: 1000/1A Class PX, VK 500V   **CT Rations for 66KV are**   * Core 1: 800-400/1A 5P20, 30VA * Core 2: 800-400/1A 5P 0.5, 30VA * Core 3: 800-400/1A 5P20, 30VA * Core 4: 800-400/1A Class PX,VK 500V * Core 5: 800-400/1A Class PX, VK 500V |
| 21. | Lot 1 - Price Schedule, Schedule No.1, Item No. 22 | 66kV current transformers, outdoor, 800- 400/1/1/1/1A,  Please provide: CT Ratio, Core Wise Details, Burden, Accuracy Class. | Lot 1: **CT rations for 220kV are;**   * Core 1: 400-200/1A 5P20, 50VA * Core 2: 400-200/1A 5P 0.5, 50 VA * Core 3: 400-200/1A 5P20, 50 VA * Core 4: 400-200/1A Class PX, PK 500V * Core 5: 1000/1A Class PX, VK 500V   **CT Rations for 66KV are**   * Core 1: 800-400/1A 5P20, 30VA * Core 2: 800-400/1A 5P 0.5, 30VA * Core 3: 800-400/1A 5P20, 30VA * Core 4: 800-400/1A Class PX,VK 500V * Core 5: 800-400/1A Class PX, VK 500V |
| 22. | Lot 4 - Price Schedule, Schedule No.1, Item No. 5 | 66kV current transformers, Please provide: CT Ratio, Core Wise Details, Burden, Accuracy Class | Lot 4: **CT rations for 66kV are;**   * Core 1: 400-200/1A 5P20, 50VA * Core 2: 400-200/1A 5P 0.5, 50 VA * Core 3: 400-200/1A 5P20, 50 VA * Core 4: 400-200/1A Class PX, PK 500V * Core 5: 1000/1A Class PX, VK 500V   **CT Rations for 33KV are**   * Core 1: 800-400/1A 5P20, 30VA * Core 2: 800-400/1A 5P 0.5, 30VA * Core 3: 800-400/1A 5P20, 30VA * Core 4: 800-400/1A Class PX,VK 500V * Core 5: 800-400/1A Class PX, VK 500V |
| 23. | 66kV Voltage Transformers 66/√3 / 0.11/√3 / 0.11/√3 | Please provide: CT Ratio, Core Wise Details, Burden, Accuracy Class | 66/√3 / 0.11/√3 / 0.11/√3, 30VA |
| 24. | Price Schedule-Lot-4  66/33KV SUBSTATION AND 33KV METERING STATION WORKS  Schedule No. 6 | Spares for Substation, Please Clarify is meaning of 1 Set in BOQ is for Three-Phase requirement?  Does 1 Set CT/VT mean 3 CTs/VTs for Three Phases? | One (1) Set means One (1) number for Lot 4, schedule number 6. |
| 25. | 33KV Metering Station | 33kV Current Transformer, 33kV Voltage Transformer |  |
| 26. | Vol-II, Technical Specification, Lot1, Cl-15.5.4, Pg.- 2-328 (320) &Price Schedule Lot-4, Sch- 4 B, Item no. 43 & Item no. 1 | According to the scope of work in the contract the boreholes (at least 3 No. for the 220/66 kV bay) shall be augured to a maximum depth of 6m below existing grade by a rotary drilling rig equipped with conventional soil sampling and testing tool. Trial pits (3 No. for substation) shall be hand-dug to 1m depth after ensuring stability of the immediate subsurface. The excavated faces shall be examined and logged capturing the depths of the various layers and their physical characteristics. The proposed locations of boreholes and trial pits by contractor, shall be subject to Client’s approval.  Kindly provide the preliminary Soil Investigation reports for proposed Weru and Galana- Kulalu substation for tender stage working. After award of work we will do the detailed soil investigation as per tender specifications. Also confirm the requirement of 3 Nos. of boreholes of minimum 6 Meter depth from existing ground by rotary drilling machine. As per BOQ specification, we presume we have to quote considering the BOQ specification. | Kindly refer to Lot 4, schedule 4, item No. 43 and quote as provided. |
| 27. | Crop Compensations & Access Road | We understand that the land required for Weru substation and Galana- Kulalu substations shall be acquired by the REREC and any crop compensation, way leaves clearance for access road to substations are in the scope of REREC. Kindly confirm | Land and Wayleave acquisition is the responsibility of REREC.  There are no crps along the wayleave corridor  Contractor to improve access road for delivery of materials, equipment and personnel to project site where applicable. |
| 28. | Disposal of Excess excavated soil | Kindly provide the lead for disposal of surplus soil excavated while civil activities | The bidder is expected to carry out their own due diligence to locate approved County disposal designated sites. |
| 29. | Existing Platform levels | Kindly provide the proposed finished ground levels for substation platforms for Weru & Galana Kulalu Substations, and also provide the contour map drawing for proposed substations platform for working out the flood levels of substations and proposed drainage work. | The finished ground level shall be a minimum of 600mm above invert level of existing drain or road surface. |
| 30. | Approved Vendor/supplier list | Kindly provide approved vendor/supplier list for civil and electro-mechanical works | REREC does not have an existing Vendor/Supplier list, however The Corporation shall evaluate all the sub-contractors provided by the bidders. |
| 31. | Layout Plan | Kindly provide the existing Weru substation layout plan for design and working of line related works for the additional Transformer and Line bay. | That has been provided and is on the REREC website (addendum 001) |
| 32. | Switchyard Gravelling | There is no separate BOQ Line item for Switchyard Gravelling work. Kindly suggest in which line item we can consider Supply and Page 7 of 10 EZEETEC LIMITED UNIT 7B/C, 7TH FLOOR, TRV TOWERS NGARA ROAD, NGARA P.O BOX 66614-00800 NAIROBI, KENYA TEL: +254 (0) 204442745 FAX +254 (0) 204442747 CELL: +254 (0) 797 239 957 EMAIL: info@ezeetec.co.ke spreading of Switchyard gravelling | The switchyard gravelling to be under schedule 4, cost of installation including supply and installation of all mechanical works and project management. The works are under switchyard works, item No. 45. |
| 33. | Proposed Galana Kulalu Office Block | Kindly provide detailed drawing (section, elevations, structural finishing details including flooring, painting, false ceiling, plumbing and small power lighting etc.) for Office blocks & Staff Quarters in order to estimate appropriate quantities to the requirement of tender. | The office block/ staff quarters shall be to the following details;  The **floor to ceiling** height shall be 2.7meters with ventilation provided as per the National Building Code,  **Cornices:** The cornices should be 100mm wide and 15mm thick. The cornice should be gypsum.  **Ceiling:** The ceiling should be 9mm thick gypsum board.  **Aluminum railings:** The minimum dimension of the aluminum railing should be 30\* 30\*2.5 mm  A**luminum window frames:** The window frame should be aluminum and 2.5mm thick.  **Skirting:** The skirting should either match the flooring finish or complement.  **Flooring:** The flooring should be terrazzo floor finish. Samples of terrazzo flooring and skirting must be provided.  **Tiles:** The tiles shall be used in the kitchen and washroom.  **Flooring tiles:** The flooring tiles shall be non-slip, ceramic and 6mm thick.  **Walling tiles:** The walling tiles shall be ceramic 300\*200 mm.  **Paving slabs:** The paving slabs should be 500mm\* 500mm and 50mm thick.  **Paint works:** The paint should be fire resistant and water based. Emulsion paint shall be Polyvinyl Acetate alkali-resisting formulated with high wash ability and capable of resting 8000 scrub test.  Fillers should be higher grade cellulose fillers are to be used internally and premixed filler to be used externally.  **Lighting:** Luminaries shall be fluorescent lamps except for the toilets and outdoor lighting where GLS lamps can be utilized. In offices 500 lux is required. All luminaries shall be supplied, installed and tested by the electrical sub-contractor. All metal work on the luminaries shall be connected to an insulated earth protective conductor. Lighting control switches shall be flush pattern with white finished plates.  **AC Installation:** The Contractor shall supply and install wiring and insulator for the AC units, including final connection to the unit. fire extinguishers and smoke detectors shall be fixed as per specialist instruction. |
| 34. | Galana Kulalu substation layout | Drawing provided with tender documents are not legible. Please provide the detailed drawing with plot dimension to estimate the civil quantities | Clearer drawings has been provided on the REREC website (Addendum 001) |
| 35. | Vol-II, Technical Specification, Lot4, Cl-15.9, Pg.- 2- 330 (322), Price schedule Lot-4, | Vol-II, Technical Specification, Lot-1, Cl15.9, Pg.- 2-330 (322) Water, Electricity and Other Services- For supplying water to the control building, guard house, staff housing and other facilities, the contractor shall supply, construct and mount 5000-liter water tanks made of 3mm thick galvanized flat metal sheet complete with metal stiffeners (Bracings), inlet pipe, outlet pipe, vent pipe, overflow pipe, drain pipe, iron posts or equivalent support and necessary accessories and a water system to circulate water from overhead reservoir to the 5000-liter capacity water tanks at each residential houses, control building and guard houses with automatic controls. Price schedule Lot-4, Borehole, Item no.23 Allow for PVC water tank of 10000ltrs capacity High Level Water Tank- Guesthouse(s) External work- Item no.- 9 High level water tanks, made of 8mm thick glass reinforced plastic hot pressed  molded sectional tanks of size 1000mm x 1000mm. Capacity of tank to be 11,030 liters and of preferred dimensions 3,000mm x 2,000mmx 2,000mm high. The Tank to come complete with tank cover, mosquito proof inspection vent, internal stays, jointing material, bolts and nuts including applying two coats of non-toxic bituminous paint on the inside and two coats of aluminum paint on the outside. Low level water storage tank made 8mm thick glass reinforced plastic hot pressed, molded sectional tanks of size 1000mm x 1000mm. Capacity of tank to be 30,200 Liters and of preferred dimensions 4,000mm x 4,000mmx 2,000mm high. The tank to rest on dwarf walls erected by others. The tank to be complete with tank cover, mosquito proof inspection vent, internal stays, including applying two coats of non-toxic bituminous paint on the inside and two coats of aluminum paint on the outside. Price schedule Lot-4, Water Tank- Other External Works, Item no- 79. Supply P.V.C water tank of dimensions 3m diameter and 10000 liters capacity with outlet pipe and inlet pipe that collects water form gutters fully installed. The bidder should allow in his prices the costs for a secure concrete foundation to the approval of the project manage | Just use the capacities in the BOQ and price schedule. |
| 36. | Galana Kulalu Substation 2x23MVA, 66/33kV Item no. 47 (b) Substation External Works- Access and | Galana Kulalu Substation 2x23MVA, 66/33kV Item no. 47 (b) Substation External Works- Access and Road parking  Kindly provide the minimum width for Internal and External roads (Access including Length). Also provide the minimum car parking area required or no. of cars to be parked | The minimum width of the internal road is 6 meters and the length of the internal road shall be from the gate to the furthest equipment as per the bidders design. The access/external road dimensions are to adhere to relevant road authority requirements.  The minimum no. of cars to be parked are 5. |
| 37. | Galana Kulalu Substation 2x23MVA, 66/33kV Item no. 51, Generator Shed | Provide the detailed drawing for Generator shed. (Specifically, size of generator shed and material to be used for shed) | The generator shed design shall comply to the manufactures requirements. The shed should be permanent, shield the generator from rain water & direct sunlight, have an oil spillage pan, be well ventilated and elevated above the finished ground level by minimum 300mm. |
| 38. | Metering Station Civil and Structural Works Item no. 88, Power Transformer Plinth & Structure Work | As per drawing provided with tender document is not mentioning any power transformer. Kindly confirm we have to consider the transformer for metering station. If yes, kindly provide the rating of transformer for foundation design | There is no power transformer at the metering station, hence no need for the plinth. However construction of H-pole for the auxiliary transformers shall be required. |
| 39. | (b) Substation External Works Item no. Borehole | We presume that we have to consider Borehole costing only for Galana Kulalu substation (1 no) for Construction water and after completion of work, we have to handover the borehole to client. Kindly confirm | We confirm the borehole and all associated pipeworks shall be handed over to REREC after completion of works. |
| 40. | (b) Substation External Works Guest Houses | There is no BOQ line item for following work for Guest houses 1) Excavation Work Page 10 of 10 EZEETEC LIMITED UNIT 7B/C, 7TH FLOOR, TRV TOWERS NGARA ROAD, NGARA P.O BOX 66614-00800 NAIROBI, KENYA TEL: +254 (0) 204442745 FAX +254 (0) 204442747 CELL: +254 (0) 797 239 957 EMAIL: info@ezeetec.co.ke 2) Structural Concrete work 3) Reinforcement steel 4) Form/Shuttering Work 6) Block Work 7) Backfilling & Disposal of Excess. Kindly confirm if we have to quote for each line Item in BOQ or we can quote Lumpsum amount. | Quote lumpsum |
| 41. | Galana Kulalu Substation 2x23MVA, 66/33kV Item no.- Security fence (b) Substation External Works Item no- 62 Fencing & Item no- 86, Electric Gate Installation | BOQ specification mentions 125x125x3000mm cranked precast concrete post, where as Technical specification Cl. No. 5.1.1.5, Fencing, Pg.- 15 mentions different sizes of steel pipes. Kindly confirm the materials required for fencing post. | 125x125x300mm precast concrete shall be used |
| 42. | (b) Substation External Works- Office | We presume that we have to construct only one office building, kindly confirm | We have only one (1) number office. |
| 43. | SSVT RATING |  | The revised SSVT rating should be  220/0.4  3No.x50kVA  To be placed at the incomer 220kV bus bar at Weru |