# AMHARA NATIONAL REGIONAL STATE PUBLIC ENTERPRISE SUPPORT AND FOLLOW UP AUTHORITY

## Request For Proposal (RFP) For Selection Of Joint Venture Partner For Transformer Manufacturing /Assembly Business.

**May 2021**

Bahir Dar
Ethiopia

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| **RFP Description** | ***Invitation To Proposer To Submit Proposals For Selection Of Joint Venture Partner For Transformer manufacturing Business. Effective From 22 May 2021G.C*** |
| **RFP NUMBER** | |
| **NAME OF INSTITUTION** | **AMHARA NATIONAL REGIONAL STATE PUBLIC ENTERPRISE SUPPORT AND FOLLOW UP AUTHORITY** |
| **PLACE** | BAHIRDAR, ETHIOPIA |
| **OPENING** | DATE: **22 May 2021G.C** |
| **CLOSING** | **DATE: 21 June 2021 G.C TIME: 10:00 local time** |
| **CONTACT DETAILS OFFICE HOURS: 08:00 – 05:30 (MONDAY TO FRIDAY) and 08:00 – 12:00{SATURDAY)** | Adress; Bahirdar Kebele 14 Aregawuyan hentsa 3rd floor office number 2<br>P.O. BOX ------- |
| TEL | Tel: +251583202761 |
| EMAIL | anrspesfa2008@gmail.com |
| CONTACT PERSON | |
| **RFPS CAN BE REQUESTED VIA EMAIL** | WEBSITE, www.amharaindustrial.com.et OR EMAIL: anrspesfa2008@gmail.com |
| **WHERE RFPS SHOULD BE DELIVERED** | THE SUBMISSION BOX IS SITUATED AT: |
| **CATEGORY** | SERVICES: MANUFACTURING |
| **SECTOR** | GOVERNMENTAL |
| **REGION** | AMHARA, ETHIOPIA |

# *Request For Proposal*
## ***For selection of Joint Venture Partner***

The Amhara National And Regional State Public Enterprise Support And Follow-Up Authority**(ANRS PESFA)** is a regional authority established by proclamation number 236/2008 in the region to support and control public enterprise activity in the regional state. Nowadays the authority manages more than 15 enterprises. From these enterprises, the Amhara metal industry and machine technology development enterprise **(AMIMTDE)** is one of them and was established by Regulation number 127/2007 to carry out the task of manufacturing and commercializing metal and machine technology products and which is capable and bringing about technological transformation to the Region. This enterprise is located in Bahirdar city and has a branch in Kombolcha City of the region.

To achieve its objective the AMIMTDE is established different factories in these cities and they are working their activity. Also, for further expansion of projects, it prepared lands and building for different projects. Consequently, based on the Authority's responsibility the office of the Authority needs to expand the AMIMTDE business that can support the economy of the region as well as the country. As a result, the Authority would like to solicit interested, qualified, and experienced joint ventures in one or all of the following areas of the business to submit their technical and financial proposals to work with AMIMTDE. The proposed projects are;

1. Car Assembly business in Bahir dar or Kombolcha City.
2. Transformer manufacturing business in Bahir dar city, and
3. Tractor Assembly business in Kombolcha or Bahir dar city of the region.

Firms/companies/individuals submitting proposals for consideration must have significant, relevant experience in the selected business. Each proposal shall contain the full name and address of each person or company submitting the proposal. To receive a complete Request for Proposals (RFP documents) it is available at no cost from ANRS PESFA office number 2 or AMIMTDE office number 29 in Bahirdar city or visit the AMIMTDE website at www.amharametalindustry.com.et.

ANRS PESFA (the Authority) reserves the right to reject the proposal and waive informalities or irregularities when deemed to be in the best interest of the Authority. The Authority does not discriminate against a proposer based on race, religion, color, sex, national origin, age, disability, faith-based organization, or any other basis prohibited by state or federal law.

All proposers shall be submitted the proposal document manually in ANRS PESFA office or electronically via email anrspesfa2008@gmail.com **NO LATER THAN MONDAY, June 21, 2021, AT 10:00 local time**

For further information and the full terms of reference regarding the RFP please contact us at the following address.

Tel- +251583202761 Office- Kebele 14 Aregawuyan hentsa 3rd floor office number 2
Bahirdar, Ethiopia.

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# ABBREVIATION

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|---|---|
| **ANRS PESFA** | Amhara National Regional State Public Enterprise Support And Follow Up Authority |
| **AMIMTDE** | Amhara Metal Industry And Machine Technology Development Enterprise |
| **CNC** | Computerized Numerical Controlled |
| **CBE** | Commercial Bank Of Ethiopia |
| **FP** | Financial Proposal |
| **CKD** | Complete knocked down |
| **IT** | Information Technology |
| **JV** | Joint Venture |
| **LoA** | Letter Of Acceptance |
| **RFP** | Request For Proposal |
| **TP** | Technical Proposal |
| **SKD** | Semi Knocked down |

# GLOSSARY AND DEFINITIONS

| Particulars | Definition |
|---|---|
| **Proposal** | The Proposal having all the documents required under this RFP including, but not limited to, information, required documents in Hard Copies, and other documents required for fulfilling the eligibility criteria. |
| **Proposer(s)** | An individual/proprietor/partnership/Co-operative Society/ Corporation /Government undertaking/ Company registered under the Companies Act or any other legal entity, who has submitted a proposal against this RFP. |
| **Proposal Documents** | The documents, and any other Electronic Devices, to be submitted along with the proposal and including but not limited to all the documents for substantiating the claim of Proposer for the fulfillment of its eligibility criteria. |
| **RFP Process** | The process of inviting RFP, receipt of proposals, evaluation of proposals, and including but not limited to all the activities relating to the selection of Selected Proposer against this RFP. |
| **Joint Venture Agreement.** | An agreement to be finalized by the AMIMTDE and to be executed for business undertaking between AMIMTDE and Selected Proposer in the form provided by the AMIMTDE. |
| **Letter of Acceptance (LoA)** | A letter of Acceptance (LoA) to be issued in duplicate to notify the Selected Proposer regarding the acceptance of its proposal subject to provisions of this RFP. |
| **Selected Proposer** | The Proposer, who has been selected by the RFP evaluation committee after final evaluation and has emerged for issuance of LoA. |
| **Production Unit** | The manufacturing plant, which has a semi-automated assembly line for the production of the required Transformer as per the specifications provided, with the interference of the human hand. |
| **Product Specifications** | Transformers which has been assembled by process and should comply with the technical specifications provided. |
| **Assembly / Production / Line** | Production Lines, to be used for Assembling Transformers which shall include one Production Line for assembling different models of sedans and pick-up Transformers; and the other Production Line for assembling different models of busses and Dump Transformer. |
| **Annual Production Capacity** | Sum of Production Capacity of each Production Line for assembling of Transformers with process and method meeting with the Product Specifications in a year. |
| **System of Automation** | Technique, method, or system of operating or controlling the Assembly process by semi-automatic means using electronic devices and software with the intervention of human hands from a control room. |
| **Infrastructure** | It includes a Production Unit for assembling Transformers and contains but is not limited to Sufficient Power Supply, water, roads and drainage, lab, office, and arrangement of necessary logistics to complete the assembly and the supply chain up to the customers. |

# SECTION I

## 1.1 GENERAL INSTRUCTIONS

1.1.1 All Proposers are required to submit their Proposals by following the guidelines outlined in this RFP. To promote consistency among Proposals and minimize potential misunderstandings regarding the interpretation of Proposals by ANRS PESFA, the format in which Proposers have to specify the fundamental aspects of their Proposal has been broadly outlined in this RFP.

1.1.2 RFP document can be accessed/ downloaded from website www.amharametalindustry.com.et. The proposer shall need to upload the RFP documents on the above-mentioned website or they can be accessible in our office in Bahir dar City, Ethiopia.

1.1.3 Notwithstanding anything contained in this RFP, ANRS PESFA reserves the right to accept or reject any Proposal, and to annul the RFP Process, and reject all Proposals, at any time without any liability or any obligation for such acceptance, rejection, or annulment, and without assigning any reasons thereof.

1.1.4 Any misrepresentation / improper response shall lead to the disqualification of the Proposer. If such disqualification/rejection occurs after the Proposals have been opened and the first Proposer gets disqualified/rejected, then ANRS PESFA reserves the right to:

- invite the remaining Proposers for negotiation in accordance;
- Take any such measure as may be deemed fit at the sole discretion of ANRS PESFA, including the annulment of the RFP Process.

1.1.5 In case it is found during evaluation or at any time before the signing of the JVA or after its execution and during the period of subsistence thereof, that one or more of the Eligibility Criteria have not been met by the Proposer or the Proposer has made a material misrepresentation or has given any materially incorrect or false information, the Selected Proposer shall be disqualified forthwith if not yet appointed by the issue of Letter of Acceptance ("**LoA**"). If the Selected Proposer has already been issued the **LoA** and the Selected Proposer has entered into the JVA with ANRS PESFA, the JVA will be terminated, by a communication in writing by ANRS PESFA to the Selected Proposer.

1.1.6 ANRS PESFA reserves the right to verify all statements, information, and documents submitted by the Proposer in response to the RFP or the RFP Documents and ask for clarification/ additional information.

1.1.7 Failure of ANRS PESFA to undertake such verification shall not relieve the Proposer of its obligations or liabilities hereunder nor will it affects any rights of ANRS PESFA thereunder.

1.1.8 The statements and explanations contained in this RFP are intended to provide a proper understanding to the Proposers about the subject matter of this RFP and should not be construed or interpreted as limiting in any way or manner the scope of work and obligations of the Selected Proposer. ANRS PESFA has the right to amend, alter, change, supplement or clarify the scope of work, the JV Partnership to be formed according to this RFP or the terms thereof contained herein. Consequently, any omissions, conflicts, or contradictions in the RFP Documents are to be noted, interpreted, and applied appropriately to give effect to this intent, and no claims on that account shall be entertained by ANRS PESFA.

## 1.2 Disclaimer & Confidentiality

1.2.1 The information contained in this Request for Proposal document (the "RFP") or subsequently provided to Applicant(s)/Proposer(s), in documentary form by or on behalf of Amhara regional State Public Enterprise Support and Follow up Authority (in short ANRS PESFA) is provided to Proposer(s) on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

1.2.2 ANRS PESFA may in its absolute discretion at any time, but without being under any obligation to do so, update, amend or supplement the information, assessment, or assumptions contained in this RFP.

1.2.3 The issue of this RFP does not imply that ANRS PESFA is bound to select a Proposer or to appoint the Selected Proposer or Selected Applicant, as the case may be, to be a Joint Venture Partner. ANRS PESFA reserves the right to reject all or any of the Proposals or Proposals without assigning any reason whatsoever.

1.2.4 The Proposer shall bear all its costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by ANRS PESFA, or any other costs incurred in connection with or relating to its Proposal. All such costs and expenses will remain with the Proposer and ANRS PESFA shall not be liable in any manner whatsoever for the same or any other costs or other expenses incurred by a Proposer in preparation or submission of the Proposal, regardless of the conduct or outcome of the RFP Process.

1.2.5 The Proposal and any information provided therewith by the Proposer within the Proposal Due Date shall become the property of ANRS PESFA and ANRS PESFA shall not return the same to any Proposer.

1.2.6 Information relating to the examination, clarification, evaluation, and recommendation for the Proposers shall not be disclosed to any person who is not officially concerned with the RFP Process or is not a professional advisor advising ANRS PESFA about or matters arising out of or concerning the RFP Process.

1.2.7 The Proposal and information provided by the Proposer shall be treated as business secrete and would not be disclosed to anyone.

# SECTION II

## 2.1 INTRODUCTION

The Amhara Metal Industry and Machine Technology Development Enterprise was established by regulation No. 127/2007 under the provision of article 58, sub-article 7 of the revised national constitution of the Amhara national regional state. This enables to achieve the development goals of the industrial sector in the region. With the view to support the development, it has been found necessary to accelerate the industrialization transformation of the region by getting rid of investment limitations, the inadequacy of productivity, least technological capability, poor supply of production inputs, weak commercialization confronted on the major manufacturing industry components and thereby filling the gap of the market therein.

Consequently, the Amhara metal industry and machine technology development enterprise (AMIMTDE) is hereby established as an autonomous regional government enterprise having its legal personality. The enterprise is well thought-out to have a capacity to bring technological transfer in the region and carry out production and commercialization of metal and machine technologies through solving the demand, supply, and utilization obstruction were seen in the manufacturing industry in the region. Because of the above objective now a day the enterprise is implementing different metal and engineering projects in the region. The enterprise has a general flexible workshop, foundry plant, transformer maintenance plant at Bahir dar city, and farm implement factory at kombolcha City in Amhara Region. These workshops are equipped with new types of machinery with new technology like CNC Machineries by investing more than 1.2 Billion Ethiopian Birr.

The global farm machinery industry has been enjoying strong growth and profitability in recent decades. Since Ethiopia's Farm machinery manufacturing industries are infants; farm machinery importing companies are importing Transformers to the market. It uses mainly Djibouti port, which is located about 1000 KM from Addis Ababa to import the Transformer. Most dealers complain about the shortage of foreign currency to import Transformers. As a result, they cannot satisfy the demand both in quantity and timely delivery for the customer even for those dealers who have ordered before two years. Also, the world marketing trends of farm machinery are seen as the demand-supply gap. Our Enterprise business study also shows that there is a gap between the demand and supply of Transformers in the country Ethiopia. As a result, the enterprise wants to establish a Transformer assembly plant to reduce the imported Transformers, satisfy market needs, and create job opportunities for citizens.

The world experience shows such a business needs capital, technology, and human resource therefore, now we are searching for cooperation partners for the implementation of a new expansion business that is a Transformer assembly Business in Bahir Dar or Kombolcha city in the Amhara Regional State. The proposed Assembly line will include different models of Transformers. These Transformers have been demanded in the governmental organization besides the shortage of Transformers, most of their Transformers are old and need replacement and spare parts for maintenance. Now a day it is challenging to supply spare parts due to a shortage of currency and most of the Transformers model is old and is not easily accessible in the market. It needs some solution inside the country that can solve this spare part demand by manufacturing frequently breakdown parts. Therefore, our enterprise wants to supply for both private investors and governmental institutions in the region as well as in the country of Ethiopia as a whole. Our cooperation model is a joint venture and we want to achieve a win-win principle with our partner.

## 2.2 The objective of the proposed Business

### 2.2.1 The general objective of the Business

- To establish Transformer manufacturing factory and finally localize selected parts needed for the assembly of Transformers in Bahirdar of Amhara region.

### 2.2.2 The specific objective of the Business

- To assemble different rating Transformer to substitute imports.
- To adapt and localize Transformer Assembly technology and selected spare parts.
- To create job opportunities.
- To contribute to the national economic development by saving currency.

To achieve these objectives, AMIMTDE will have a state-wide network reaching the remotest corners, which streamlines the timely supply of Transformers and services to customers with the support of the regional State. Also, AMIMTDE has working area and free compounds for different purposes of the assembly project. The Enterprise also has qualified human resources in different qualifications that can pool to the JV Company.

Besides these facilities and capabilities, the project needs extra experienced human resources, equipment, and technology to achieve the aim of the proposed business. Therefore, the enterprise intends to select a technically, financially, and commercially sound JV partner for the Assembly and localization of selected parts of Transformer as per the RFP document provided below. The ANRS PESFA would like to create a Joint Venture between AMIMTDE and the selected proposer.

The Selected Proposer shall be responsible for the day to day operations and management of the company and shall be responsible for Assembly and localization of parts following the provisions of the Joint Venture Agreement (the "Joint Venture Agreement" to be entered into between AMIMTDE and the Selected Proposer in the form which will be prepared by ANRS PESFA. The JV agreement shall set forth the detailed terms and conditions for the partnership between the Selected Proposer and AMIMTDE.

## 2.3 Purpose, Scope, and Other Description of the Business of JV Company

### 2.3.1 Purpose of the JV Company.

The purpose of the JV Company is to use efficient and advanced technology and management, assembling, and distribution techniques to the JV Products, to secure the quality, value, and competitiveness of such products, and to obtain satisfactory economic benefits for the Parties.

### 2.3.2 Scope of the Business

2.3.2.1 The business scope of the JV Company is constructing transformer assembly plant to assemble transformer from 25kva/15kv or 33kv up to 1250kva/15kv or 33kv in Bahirdar City for future to localize or to manufacture parts, components, and accessories for transformer which will be assembled in the JV company; to sell the products assembled by itself, and to provide after-sales services (including spare parts) in connection with its products.

2.3.2.2 The JV Company also shall conduct all business activities necessary for or ancillary to the activities including but not limited to engineering, marketing, financial services, and training activities when it is required.

2.3.2.3 At the discretion of the Board of Directors and subject to compliance with Ethiopia Laws and the obtaining of approval from the Examination and Approval Authority, additional products might be assembled and manufactured, marketed, sold, and serviced by the JV Company.

2.3.2.4 Since Ethiopia has no domestic component suppliers, it is appropriate to start with CKD. It will expand the capacity and moving from CKD to complete manufacturing after a year. After a company proceeds from CKD to complete manufacture then component production can be started in the enterprise after 2 years.

### 2.3.3 Joint Venture Term

The duration of the JV Company shall commence on the Establishment Date and continue for five (5) years thereafter unless earlier terminated or further extended as provided herein. The term of the JV Company may be extended upon the mutual consent of the Parties. The Parties shall commence negotiations on whether and for how long to extend the Joint Venture Term no less than one (1) year before the expiration of the Joint Venture Term (or any extension thereof).

## 2.3.4 Production Scale

The annual production scale of the JV Company is estimated to be 2496 it is consider that 8 per day .

2.3.5.1 The Parties shall prepare on a best estimate basis an initial business case that reflects their common understanding of the estimated profitability of the JV Company (the "Initial Business Case"). The Initial Business Case sets out the financial plan of the JV Company for the years 2021 – 2023.

2.3.5.2 The Board of Directors shall annually approve a long-range plan for the JV Company (the "Business Plan") covering five years starting with the following calendar year. The creation of Business Plans is a rolling process with each Business Plan replacing the Business Plan that was approved for the preceding year.

2.3.5.3 The Board of Directors shall annually approve a budget for the JV Company for the following calendar year (the "Budget"). The Budget shall set forth the detailed financial planning of the JV Company. The Budget shall be prepared together and in compliance with the Business Plan and shall comply with the cost positions of the Business Plan that are applicable for the same calendar year.

2.3.5.4 The Board shall approve the Business Plans and the Budgets prepared and submitted by the Management; provided that the Management prepares the Business Plans and Budgets under the requirements of the Agreement and any internal rules and guidelines adopted by the Board.

## 2.3.6 Total Amount of Investment

The total amount of investment of the JV Company shall be indicated by the proposer.

## 2.3.7 Contribution to Registered Capital and Contribution Schedule

2.3.7.1 AMIMTDE's contribution to the registered capital of the JV Company, and shall represent a building, infrastructure, and other utilities and facilitates the bureaucratic issues concerning the business. AMIMTDE's registered capital contribution will be made in kind. Therefore, the amount of share will be proposed by the proposer and it will be negotiated by the two parties before JV agreement.

2.3.7.2 Both Parties shall make their contributions to the registered capital of the JV Company within thirty (30) calendar days of the issuance of the Business License of the JV Company.

2.3.7.3 If any Party fails to make its capital contribution, in whole or in part, such Party shall pay simple interest to the JV Company on the unpaid amount from the date due until the date the contribution is made at the rate for short-term (Three months) commercial loans offered by the CBE on the due date plus two percent (2%). If any Party does not make its capital contribution in full within thirty (30) days of the due date, the other Party shall have the right to terminate the Contract and claim damages from the breaching Party.

## 2.3.8 Financing

2.3.8.1 The balance between the total amount of investment and registered capital of the JV Company, under approval by the Board and as per the business needs of the JV Company, may be raised by the JV Company through loans from domestic and/or foreign banks.

2.3.8.2 The JV Company shall be responsible for obtaining any loans or other financing that may be required by it to finance its operations and capital expenditures. If and to the extent the JV Company is unable to raise funds through loans from domestic and/or foreign banks or other financial institutions at rates that the Board determines to be competitive, each Party shall on a pro-rata basis by its share of the registered capital of the JV Company, itself or through its Affiliates, provide Shareholder Loans to the JV Company which shall not exceed the maximum amount of loans as provided for in the Business Plan applicable for the respective period. In the event the financing needs of the JV Company as proposed by the Board shall exceed the maximum amount of loans as provided for in the Business Plan applicable for the respective time, both Parties shall seriously consider whether to provide any additional Shareholder Loans above such maximum amount of loans

## 2.3.9 Management Organization

2.3.9.1 Formation of the Board the date of establishment of the Board of Directors shall be deemed to be the Establishment Date.

2.3.9.2 The Board of Directors shall establish a management organization (hereinafter referred to as "Management"), which shall be responsible for and in charge of the day-to-day operation and management of the JV Company. The Management shall be made up of one General Manager, one or more Deputy General Manager(s), Department Heads, and other senior officers as determined by the Board of Directors from time to time.

2.3.9.3 The remuneration and benefits of all Human resources including the General Manager shall be approved by the Board.

2.3.9.4 The Senior Officers shall be individuals with excellent professional qualifications or substantial experience in their respective fields and shall have the very good oral and working capability in the English language.

2.3.9.5 ***The proposer has to be proposed the number and proportion of board and management members and their assignment process.***

## 2.3.10 Existing Equipment, Existing Building and Assembly Site

2.3.10.1 AMIMTDE and the proposer will transfer possession of the Assets to the JV Company within thirty (30) days from the date that each shall make its respective contribution to the registered capital of the JV Company per the agreement.

2.3.10.2 AMIMTDE will take all actions necessary to carry out registration and all other procedures that may be required by applicable Ethiopian Laws or the relevant Amhara regional government authorities in respect of the transfer/rent/ of the ownership of the Existing Buildings which is built for this purpose to the JV Company.

2.3.10.3 The JV Company shall enter into the Land Use Rights Lease/rent/ Contract with the relevant government authority in Ethiopia for the lease/rent/ of the land use lease/rent/ rights for the Site. The term of the land use rights for the Site acquired by the JV Company under the Land Use Rights Lease/rent/ Contract shall be at least five (5) years commencing on the date on which the relevant government authority issues the State-owned Land Use Certificate for the Site in the name of the AMIMTDE.

2.3.10.4 AMIMTDE will be responsible for the payment of all outgoings, taxes, and fees in connection with the Site and the Existing Buildings incurred before the date of the transfer/rent/ of the Assets to the JV Company. Except for the tax and fee which will be paid by the JV Company for future use. AMIMTDE is further responsible for the payment of any other outgoings, taxes, and fees that may be imposed by the relevant government authorities in connection with the transfer of the ownership of the Existing Buildings from AMIMTDE to the JV Company.

## 2.3.11 Technology Transfer

2.3.11.1 The proposer shall sign a Technology License Agreement under which the proposer will license the JV Company the right to use certain technology, management, and operational know-how, which may be required by the JV Company for the assembly, sales and marketing, and service of the JV Products. In addition, the proposer should have to give license to the JV Company to be a sole representative of the business in Ethiopia.

2.3.11.2 The proposer will pay certain licensing fees and royalties as provided in the Technology License Agreement. The term of the Technology License Agreement will not be limited to a certain years/It should be unlimited/. At the first meeting of the Board, the Board shall ratify the Technology License Agreement.

2.3.11.3 According to the terms of the Technology License Agreement, the proposer shall make available to the JV Company a complete, correct, current version of the Technical Documentation as defined in the Technology License Agreement for each of the JV Products which the JV Company may produce.

2.3.11.4 The proposer shall provide the JV Company with technical assistance for the startup of the assembly of the JV Products, procurement of necessary tooling and equipment, and training of the JV Company's employees. The purpose of the technical assistance and training is to assist the JV Company to produce qualified JV Products.

2.3.11.5 In the Technology License Agreement, the proposer will bring manufacturer authorized certificate or letter for the JV Company to localize /manufacture/ some selected JV Products components to meet special requirements of the JV Company or special conditions in the market of Ethiopia in strict conformity with the Technical Documentation and the manufacturer Quality Standards.

2.3.11.6 As part of the technology transfer and quality management, the proposer shall make available to the JV Company the relevant IT systems and software covering assembling, logistics, finance, sales, warranty, and parts processes. The IT system will be customized for the JV Company's (AMIMTDE and the proposer) needs and local requirements.

## 2.3.12 Quality Standards

2.3.12.1 The Parties recognize that the technology under which the JV Products are manufactured by the JV Company is highly advanced and requires meeting very high standards to produce premium class products. Therefore the JV Products, the manufacturing processes of the JV Company, and the quality management of the JV Company's business operations shall fully comply with the quality requirements as determined by the manufacturer from time to time on a worldwide basis and with applicable Ethiopian Laws.

2.3.12.2 The Transformer which will be assembled in the JV Company must work in Ethiopia for power grid network.

2.3.12.3 The JV Company will ensure that its policies and practices relating to the quality and safety of the JV Products and environmental protection shall meet the standards set by the manufacturer, and applicable Ethiopian Laws, whichever are higher. When taking measures to meet the manufacturer's Quality Standards, the JV Company shall at all times ensure that it complies with Ethiopian Laws.

## 2.3.13 Purchase of Materials and Services / Local Content

2.3.13.1 The JV Company shall be entitled to purchase and obtain, from the international markets, the raw materials, tools, machinery and equipment, parts and components, office appliances, and services necessary for the operations of the JV Company. All raw materials, machinery, and equipment, parts, and components shall meet the manufacturer's Quality Standards and requirements of Ethiopian Laws.

2.3.13.2 The JV Company may incorporate localized parts and components into the JV Products, provided that such localized parts and components have been tested and accepted according to a separate agreement to be entered into by the manufacturer and the JV Company, and provided that such localized parts and components are commercially acceptable to the JV Company in such terms as to price, warranty, and delivery schedules.

2.3.13.3 The JV Company shall establish procedures for and carry out the testing of localized parts and components according to the agreement. The proposer shall support the JV Company in the localization process of parts as provided in the agreement.

## 2.3.14 Sale of JV Products

2.3.14.1 The JV Products will be sold by the JV Company in Ethiopia and east Africa region. The retail prices (prices to customers) or the recommended retail prices of the JV Products will be proposed by the Management of the JV Company to the Board of Directors per the policies and guidelines promulgated by the proposer from time to time and in consideration of the market conditions in Ethiopia. The Board has the discretion to vary retail prices or recommended retail prices by some percent greater or less than the proposed retail prices or recommended retail prices submitted by Management.

2.3.14.2 Upon the decision of the Board of Directors, and subject to the approval of the Examination and Approval Authority if required, the JV Company may set up branch offices for marketing, sale, and services within Ethiopia.

2.3.14.3 Sales, marketing, and service of the JV Products in Ethiopia shall be handled by the JV Company through its authorized dealer network based on standard dealer contracts. Notwithstanding the JV Company’s responsibilities for the activities referred to hereinafter, the business operations, promotion and marketing (including market analysis, price and product planning, sales forecasting and reporting), sales, after-sales, distribution, and dealer management activities undertaken by the JV Company shall comply with the relevant procedures, schedules, and quality requirements as are determined by the original manufacturer from time to time on a worldwide basis and shall comply with the applicable Ethiopian Laws.

## 2.3.16 Labor Management

2.3.16.1 The JV Company shall be entitled to the full enterprise autonomy granted to foreign-invested enterprises and shall have complete authority over the hiring and dismissal of its employees. The recruitment, employment, discipline, dismissal, and the resignation of the employees of the JV Company and their wages, salaries, insurance, welfare benefits, and other matters shall be handled under the Ethiopian Labor Law and other relevant Laws.

2.3.16.2 Either Party may recommend any of its existing employees (whether blue-collar or white-collar) to work for the JV Company. If the JV Company upon its discretion decides to employ any of these employees, they shall terminate their employment relationship with the relevant Party before or at the time when they enter into employment contracts with the JV Company (except for any agreement for reemployment or agreement for payment of additional compensation or fringe benefits, etc.). Thereupon they shall be deemed to be employed by the JV Company from the labor market independently. The JV Company shall not assume any obligations of any kind in respect of such employees that are related to or arose during the period before their respective dates of hire by the JV Company. Such obligations shall be assumed by the relevant Party, which shall reimburse the JV Company for any such costs incurred by the JV Company. The JV Company shall be responsible for any obligations of any kind in respect of its employees which are related to or arise after their respective dates of hire by the JV Company.

## 2.3.18 Finances, Taxes, Audit, and Distribution of Profits

2.3.18.1 The JV Company shall pay taxes, duties, and other levies (collectively "Taxes") under relevant Ethiopian Laws. If Taxes are imposed on the Parties in connection with the activities of the JV Company, the JV Company shall provide administrative assistance to the Parties to meet their obligations (e.g. preparation of returns, reports, and payments).

2.3.18.2 The fiscal year of the JV Company shall start on January 1 or July 1 of each calendar year and end on December 31 or June 30 of the same year or next year in Gregorian and the Ethiopian calendar respectively. The first fiscal year of the JV Company shall commence on the Establishment Date and end on December 31 in Gregorian or June 30 for the Ethiopian calendar of the year. The last fiscal year of the JV Company shall start on January 1 in Gregorian or July 1 of the year of termination or expiration and end on the date of termination or expiration of the Joint Venture Term.

2.3.18.3 The JV Company shall adopt an accounting system consistent with applicable Ethiopian Laws. All accounting records, books, and statements of the JV Company shall be prepared and kept both in Amharic and English. The JV Company shall use Ethiopian Birr as the base bookkeeping currency for its financial statements.

2.3.18.4 The JV Company shall as a policy require that contracts and other important documents (e.g. invoices) from third parties be in both Amharic and English. If any third party does not provide both the Amharic and the English versions as required by the preceding sentence, all relevant details of the document shall be translated by the JV Company into Amharic or English.

**2.3.18.5** Within three (3) months following the end of each fiscal year, the JV Company shall engage an accounting/auditing firm registered in Ethiopia as its auditor to examine and verify the accounts and books of the JV Company. The annual audit report shall be submitted to the Board. Either Party shall also have the right, but not the duty, to appoint, at its costs, another accounting/auditing firm registered in Ethiopia or abroad to audit the accounts and books of the JV Company. That audit shall be carried out during the normal business hours of the JV Company and shall not unreasonably interrupt the conduct of the JV Company's business. The JV Company shall make available and accessible all of its accounting books and records to such an auditor.

**2.3.18.6** After paying taxes by the relevant Ethiopian Laws and making allocations to the reserve funds, expansion funds, bonuses, and welfare funds for staff workers, the JV Company's remaining profits either shall be distributed between the Parties according to the Parties' ratio of contribution to the JV Company's registered capital or shall be retained or reinvested as decided by the Board of Directors.

## 2.3.19 Termination

Subject to the approval of the responsible Authority, either Party shall have the right to terminate the agreement before the expiration of the Joint Venture Term by written notice to the other Party, if any of the following events occur:

- the other Party materially breaches the Agreement or the Articles of Association, and such breach is not cured within thirty (30) days of written notice to the breaching party;
- the JV Company, after a start-up period of three (3) years from the Establishment Date, has sustained permanent heavy losses exceeding some negotiated amount of the total registered capital of the JV Company per annum for two (2) consecutive years, or if three (3) years after the Establishment Date the cumulative amount of losses has exceeded some negotiated amount of the total registered capital of the JV Company, whichever occurs first;
- the other Party assigns, pledges, or otherwise encumbers any of its interest in the registered capital of the JV Company in violation of the agreement or applicable Ethiopian Laws;
- a Change of Law has directly or indirectly caused or is foreseeable to cause material adverse consequences to the JV Company or any Party's benefits under the agreement and the Parties are unable to agree upon necessary within six (6) months after the Change of Law has occurred;
- unforeseen circumstances arise where it is likely that the JV Company, will suffer an overall loss during the entire Joint Venture Term;
- the other Party and/or its Affiliate(s) materially breaches or it willfully causes the JV Company to materially breach any of the Trademark License Agreement, Technology License Agreement, the Parts, and Components Supply Agreement or the agreement and such breach is not cured within some negotiated days after receipt of written notice to that causing Party;

- Total or partial performance of the agreement is prevented by an Event of Force Majeure for more than some negotiated days, and such prevention materially and adversely affects the operation of the JV Company, and the Parties are unable to find an equitable solution;
- both Parties decide to terminate their joint venture cooperation
- the Business License is amended, or a license, permit, or authorization which is required by the JV Company is withdrawn, canceled, or amended in whole or in part, and such amendment, withdrawal, or cancellation has directly or indirectly caused or is foreseeable to cause material adverse consequences to the JV Company or any Party's benefits under the agreement. If the amendment, withdrawal, or cancellation is due to the fault of a Party, such Party shall not have the right to terminate the agreement.

# SECTION III

## 3.1 Proposal Documents Preparation and Submission

3.1.1 For the selection of a Joint Venture partner, ANRS PESFA has adopted a **single-stage RFP** process (referred to as the "**RFP Process**"). During the RFP Process, the applicants (the "**Proposers**") will be requested to submit their proposal according to this RFP following the terms outlined in this RFP, all the Volumes, Appendices and Addenda thereof issued by ANRS PESFA as part of this RFP Process (collectively the "**RFP Documents**"), as modified, altered, amended and clarified from time to time by ANRS PESFA.

3.1.2 All Proposals shall be prepared and submitted by such terms. The Proposal shall be valid for not less than 120 days from the Proposal Due Date (the "**Proposal Validity Period"**). ANRS PESFA reserves the right to reject the proposal which does not meet this requirement. Any further extension of the Proposal Validity Period shall be with the consent of the Proposers. Further details of the process to be followed during the RFP Process and the terms thereof are spelled out in this RFP.

3.1.3 Any queries or requests for additional information concerning this RFP shall be submitted in writing or by e-mail till **21st June 2021 by 10:00 local time**; thereafter no request for any additional information or query shall be entertained by the ANRS PESFA.

3.1.4 The Proposers shall submit all documents as required in the Proposal only before the final date and time of submission.

3.1.5 Proposers would provide all information as per this RFP with proper indexing and page numbering. ANRS PESFA will evaluate only those Proposals that are received incomplete in all respects.

3.1.6 The Proposals shall be typed or written in indelible ink and signed by the authorized signatory of the Proposer who shall also sign each page of RFP documents. All alterations, omissions, additions, or any other amendments made to the proposal shall be signed by the person(s) signing the Proposal Covering letter,

3.1.7 All communication and information provided should be legible, and wherever the information is given in figures, the same should also be mentioned in words. In case of conflict between amounts stated in figures and words, the amount written in figures will be taken as correct.

3.1.8 Proposal Documents Required To Be Submitted Along With Proposal:

- Certified copy of Registration Certificate or any other documents for substantiating the claim of the proposal of having any legal entity.
- Draft Shareholder Agreement.
- Photos/catalog along with information in respect of the assembly plant and transformer to be assembled of each type.
- Audited Balance Sheet for Last Three Financial Years i.e. 2017-18, 2018-2019 & 2019-2020.
- The documents showing ownership/lease/sub-lease in the name of Proposer for the Production Unit and needed Infrastructure, proposed by the Proposer against this RFP.
- All the statutory licenses/certificates for Manufacturing/Producing and supplying the assembling parts should be in the name of the Proposer itself.

3.1.9 Hard copy (manual) submission by courier or hand delivery allowed or specified in the RFP shall be governed as follows:

a. The signed Proposal shall be marked "Original".
b. The Technical Proposal and the Financial Proposal envelopes MUST BE COMPLETELY SEPARATE and each of them must be submitted sealed individually and marked on the outside as either "TECHNICAL PROPOSAL" or "FINANCIAL PROPOSAL", as appropriate. Each envelope shall indicate the name of the proposer. The outer envelopes shall:
    i. Bear the name and address of the bidder;
    ii. Be addressed to ANRS PESFA as specified in the RFP
    iii. Bear a warning that states "Not to be opened before the time and date for proposal opening" as specified in the RFP.

3.1.10 Proposer shall submit the Proposal by Post/hand delivery, to reach the designated address by the Proposal Due Date. ANRS PESFA shall not be responsible for any delay in the submission of the Proposals.

3.1.11 If the covers are not sealed and marked as instructed above, ANRS PESFA assumes no responsibility for the misplacement or premature opening of the contents of the Proposal submitted, and such Proposal – at the sole Discretion of ANRS PESFA – may be deemed to be Non-responsive and hence, would be liable for rejection.

3.1.12 Email submission, shall be governed as follows:

a. Electronic files that form part of the proposal must be following the format and requirements indicated in RFP;
b. The Technical Proposal and the Financial Proposal files MUST BE COMPLETELY SEPARATE. The financial proposal shall be encrypted with different passwords and clearly labeled. The files must be sent to the dedicated email address specified in the RFP.
c. The password for opening the Financial Proposal should be provided only upon request of ANRS PESFA. ANRS PESFA will request a password only from a proposer whose Technical Proposal is technically responsive. Failure to provide the correct password will be the proposers responsibility.

3.2 **Clarifications**

3.2.1.1 To facilitate the evaluation of Proposals, ANRS PESFA may, at its sole discretion, seek clarifications in writing from any Proposer regarding its Proposal.

3.2.1.2 The request for such clarifications or substantiation and the response shall be in writing or by facsimile.

3.2.1.3 However, ANRS PESFA reserves the right not to respond to any question or provide any clarification or consider any amendment(s) suggested by the Proposers, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring ANRS PESFA to respond to any question or to provide any clarification or consider any amendment suggested by the Proposers.

3.2.1.4 ANRS PESFA may also on its motion if deemed necessary, issue interpretations and clarifications to all Proposers. All clarifications and interpretations issued by ANRS PESFA

shall be deemed to be part of the RFP Documents. Verbal clarifications and information given by ANRS PESFA or its employees or representatives shall not in any way or manner be binding on ANRS PESFA.

3.3 **Amendment of RFP**

3.3.1.1 At any time before the Proposal Due Date, ANRS PESFA may, for any reason, whether at its initiative or in response to clarifications requested by a Proposer, modify the RFP by the issuance of the Addendum.

3.3.1.2 Any Addendum thus issued will be uploaded on the website and shall be binding upon all Proposers.

3.3.1.3 To afford the Proposers a reasonable time for taking into account the contents of any Addendum, or for any other reason, ANRS PESFA may, at its discretion, extend the proposal Due Date by an appropriate period.

3.4 **Modifications / substitution / withdrawal of Proposals**

3.4.1.1 The Proposer may withdraw its Proposal after submission, provided that written notice of the withdrawal is received by ANRS PESFA before Proposal Due Date. No Proposal shall be withdrawn by the Proposer on or after the Proposal Due Date.

3.4.1.2 The withdrawal notice shall be prepared, sealed, marked, and delivered to ANRS PESFA before the Proposal Due Date, with the covers being additionally marked "WITHDRAWAL".

3.4.1.3 Any substitution/alteration/modification in the Proposal or additional information supplied after the submission of the proposal or after Proposal Due Date, unless the same has been expressly sought for by ANRS PESFA, shall be disregarded.

# SECTION IV

## 4.1 Evaluation Criteria

The Proposers should meet the following Eligibility Criteria for submission of the Proposal, in addition to submission of Proposal Documents as required. The RFP document should be read as a single document and no individual interpretation of any Clause will be permissible. All the Clauses should have to be read connecting with other Clauses of RFP.

4.1.1 Eligibility shall be assessed on applicants, fulfilling the technical capability and competence as well as for financial and organizational resources.

4.1.2 A staged approach will be used to evaluate proposers and the approach will be as follows:
Stage 1 Check if all the documents have been received and are compliant.
Stage 2 Evaluate on the technical aspect of the proposal
Stage 3 Evaluate the financial aspect of the proposal
Stage 4 Post negotiations will be applicable

4.1.3 The evaluation team shall review and evaluate the Technical Proposals on the basis of their responsiveness to the RFP documents, applying the evaluation criteria, sub-criteria, and point system. A Proposal shall be rendered non-responsive at the technical evaluation stage if it fails to achieve the minimum technical requirement indicated in the product specification. When necessary ANRS PESFA may invite a technically responsive proposer for a presentation related to their technical proposals.

4.1.4 In the second stage, only the Financial Proposals of those proposers who comply technically will be opened for evaluation. The Financial Proposals corresponding to Technical Proposals that were rendered non-responsive shall remain unopened, and, in the case of manual submission, be returned to the Bidder unopened. For emailed Proposals and e-tendering submissions, ANRS PESFA will not request the password of the Financial Proposals of bidders whose Technical Proposal was found not responsive.

4.1.5 The evaluation method that applies for this RFP shall be:

- The combined scoring method which will be based on a combination of the technical(70%) and financial score(30%). When a combined scoring method selected, the formula for the rating of the Proposals will be as follows:

Rating the Technical Proposal (TP):

**TP Rating** = (Total Score Obtained by the proposer / Max. Obtainable Score for TP) x 100

Rating the Financial Proposal (FP):

**FP Rating** = (score obtained by the proposer / maximum obtained score of the proposer) x 100

Total Combined Score:

**Combined Score =** (TP Rating) x Weight of TP(70%) + (FP Rating) x Weight of FP(30%)

4.1.6 The Proposer should be experienced in assembling or manufacturing Transformers at least continuously for the Last 10(ten) years and should be original Transformer manufacture. In line with this the proposal can be submitted by the official agent of the original Manufacturer. On the other hand a design owner of the products can submit its proposal to form the joint venture as far as the designer has legal personality. For examining the consistency of financial, technical, and commercial soundness of the legal entity, who has submitted a proposal against this RFP, it is mandatory to have the existence of the said legal entity with a minimum period of continuously for the Last Three

Financial Years with compliance of all statutory and mandatory requirements. Thus, it would be mandatory that the legal status of the Proposer should not have been altered during the Last Three Financial Years.

4.1.7 The Proposer should have all the statutory licenses for assembling and supplying of the transformers arts, in the name of Proposer itself continuously for at least the Last Three Financial Years and it is mandatory.

4.1.8 The assembly plant shall have not more than two separate Assembly Lines to assemble two types of transformers.

4.1.9 The Annual assembly Capacity of the assembly plant should be explained by the Proposer, but it should not be less than 1000 transformers per annum for the first 3 (three years) and it will be 1500 transformers for the next remaining years.

4.1.10 The Assembly plant should have a semi-Automated System with a real-time Online Monitoring facility.

4.1.11 The Proposer should have an online system of tracking, traceability, and surveillance and the same shall be submitted.

4.1.12 The Proposer shall submit an audited Balance Sheet along with financial statements of the Last Three Financial Years. The audited Balance Sheet along with financial statements should indicate the Turnover of Proposer from the business.

4.1.13 The shareholding in the proposed JV Company shall be held by two parties, AMIMTDE, and the Proposer. AMIMTDE will be subscribing to some amount of negotiated shares while the balance amount of share shall be subscribed by the Proposer.

4.1.14 Based on the investment in the JV project, the Proposer shall propose the amount of Share to be subscribed by AMIMTDE in the JV Company and shall explicitly indicate in the proposal and there will be negotiated during the agreement concerning the share amount. The Proposer should submit a Draft Joint Venture Agreement. However, it shall be negotiable and subject to the approval of the ANRS PESFA after the selection of the proposer.

4.1.15 The Proposer should be required to submit an affidavit, affirming its good experience, reputation and also to affirm that the Proposer itself and its associate company.

4.1.16 The Proposals shall be evaluated as per the criteria specified in this RFP. However, within the broad framework of the evaluation parameters, as stated in the RFP, ANRS PESFA reserves the right to make modifications to the stated evaluation criteria, which would be uniformly applied, to all Proposers.

4.1.17 The Proposer securing the highest marks shall be the **"Selected Proposer"** and ANRS PESFA may invite the Selected Proposer for further negotiation concerning JV's terms and conditions.

4.1.18 The Proposal shall be ranked based on the following Marking Criteria:

## EVALUATION CRITERIA

| S.No. | Criteria | |
|---|---|---|
| **1** | **Administrative/ Mandatory Evaluation Criteria** | **Comply/not Comply** |
| 1.1 | Language Qualifications | |
| 1.2 | Legal documents | |
| 1.3 | Original Manufacturer document | |
| 1.4 | Willing to Technology transfer | |
| 2 | **Technical Criteria** | **Max. Marks (70)** |
| 2.1 | Degree of understanding task by the Proposer | 3 |
| 2.2 | Is the proposal based on an understanding of the environment and local conditions in the preparation of the proposal? Are the risk mitigation measures considered an implementation plan? | 2 |
| 2.3 | Is the conceptual framework adopted appropriately for the task? | 2 |
| 2.4 | Is the proposal clear and are the sequence of deliverables/ activities and the planning logical, realistic and promise efficient delivery of the outputs? | 3 |
| 2.5 | Efficient and Effective Organizational Structure and Management | 2 |
| 2.6 | Quality assurance procedures applied in the organization for the deliverables | 3 |
| 2.7 | The proposal qualified under complying with the requirement including all the compliances of this RFP document | 5 |
| 2.8 | Experience of the Organization. | 4 |
| 2.9 | Relevance of mandate and specialization of the organization. | 5 |
| 2.10 | Practical Experience in the area of specialization | 6 |
| 2.11 | Knowledge and Experiences in International/Regional Experience/Emerging Economies on Similar Projects | 5 |
| 2.12 | Level of plant technology | 9 |
| 2.13 | Products quality based on the specification | 9 |
| 2.14 | Product Ability to penetrate in Ethiopia market | 12 |
| 4 | **Financial** | **Max. Marks(30)** |
| 4.1 | financial stability | 3 |
| 4.2 | Average Gross Turnover | 3 |
| 4.3 | Average Adjusted Tangible Net Worth | 3 |
| 4.4 | Average Current Ratio | 3 |
| 4.5 | Proposed Cost for the proposal | 7 |
| 4.6 | Proposed Share amount | 7 |
| 4.7 | Proposed Solution for shortage of Currency to import materials | 4 |

## 4.2 Process after Identification of Selected Proposer.

4.2.1 In the event of acceptance of the offer of Selected Proposer, ANRS PESFA shall notify the Selected Proposer through a Letter of Acceptance (the "**LoA**") (to be issued in duplicate) that its offer has been accepted subject to all the provisions of this RFP.

4.2.2 The Selected Proposer shall within 10 (ten) working days of the receipt of the LoA, sign and return the duplicate copy of the LoA in acknowledgment thereof. In the event the duplicate copy of the LoA duly signed by the Selected Proposer is not received by the stipulated date, ANRS PESFA may unless it consents to extend of time for submission thereof.

4.2.3 The Selected Proposer shall be required to execute the JV Agreement within 30 (thirty) days of the issue of the LoA by satisfying other terms and conditions as specified in this RFP to be carried out before the signing of the JV Agreement.

4.2.4 Failure of the Selected Proposer to comply with the requirements of one or more of the Clauses of this RFP shall constitute sufficient grounds for the annulment of the LoA.

## 4.3 Fraudulent Practices and Corrupt Practices

The Proposers and their respective officers, employees, agents, and advisers shall observe the highest standard of ethics during the RFP Process and after the issue of the LoA, and during the subsistence of the JVA. Notwithstanding anything to the contrary contained herein, or in the LoA or the JVA, ANRS PESFA shall reject a Proposal, withdraw the LoA, or terminate the JVA, as the case may be, without being liable in any manner whatsoever to the Selected Proposer or Qualified Proposer, as the case may be, if it determines that the Selected Proposer or Qualified Proposer, as the case may be, has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the RFP Process. In such an event, ANRS PESFA shall ask compensation and damages payable to ANRS PESFA towards, time, cost, and effort of ANRS PESFA.

# ANNEX - 1

## FORMAT OF TECHNICAL PROPOSAL

| Name of proposer: | [Insert Name of proposer] | Date: | Select date |
|---|---|---|---|
| RFP reference: | | | |

The proposer's proposal should be organized to follow this format of Technical Proposal.

| No. | Chapter | Title | Contents of the chapter |
|---|---|---|---|
| 1 | Chapter -1 | Proposal Summary | This Chapter shall discuss the highlights, key features, and distinguishing points of the Proposal. |
| 2 | Chapter -2 | Profile on the Proposing Firm | This Chapter shall include a brief description of the Proposer's firm, including firm name, address, phone number, email address, and primary contact person; brief firm history, including the current permanent staff size as well as local organization structure; and, a discussion of the firm's financial stability, capacity and resources. Additionally, this section shall include a listing of any claim, lawsuit, or litigation and the result of that action. |
| 3 | Chapter -3 | Qualifications of the Firm. | This Chapter shall include a brief description of the Proposer's qualifications, capacity, and previous experience.<br>1.Brief description of the organization, including the types of activities undertaken. Include all areas of expertise, the scope of services provided, and relevant experience, including a description of each project, the total project cost, the period over which the project was completed, and the name, title, phone number, and email address of 3(three) clients to be contacted for references.<br>2. Provide certificate (s) for accreditation of processes, policy e.g. ISO, etc.<br>3. Organization's commitment to sustainability. |
| 4 | Chapter- 4 | Product Description | This section of the proposal shall establish that the Proposer understands the enterprise's objectives and work requirements and Proposer's ability to satisfy those objectives and requirements.<br>Describe in detail the types of Transformer that can be assembled by referring to the attached specification.<br>Describe in detail the assembly plant capacity and its integrated technology and available working software. |
| | Chapter - 5 | Proposed Methodology, Approach, and Implementation Plan | This section should demonstrate the bidder's responsiveness to the RFP by identifying the specific components proposed, addressing the requirements, providing a detailed description of the essential performance characteristics proposed, and demonstrating how the proposed approach and methodology meet or exceeds the requirements. All important aspects should be addressed in sufficient detail and different components of the project should be adequately weighted relative to one another.<br>1. A detailed description of the approach and methodology for how the proposer will achieve the business objectives, keeping in mind the appropriateness to local conditions and business environment. Details how the different task elements shall be organized, controlled, and delivered.<br>2. The methodology shall also include details of the proposer's internal technical, quality assurance mechanism, and risk mitigation measures. Describe the potential risks for the performance of the proposal that may impact the achievement and timely completion of expected results as well as their quality. Describe measures that will be put in place to |

| | | | |
|---|---|---|---|
| | | | mitigate these risks.<br>3. Explain whether any work would be subcontracted, to whom, how much percentage of the work, the rationale for such, and the roles of the proposed sub-conTransformers, and how everyone will function as a team.<br>4. Describe available performance monitoring and evaluation mechanisms and tools; how they shall be adopted and used for a specific requirement.<br>5. The implementation plan including a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing including the selection of assigned employee, start date, and training.<br>6. Demonstrate how you plan to integrate sustainability measures into the execution of the contract.<br>7. List specific proposed services and support and training services to be provided<br>8. Any other comments or information regarding the project approach and methodology that will be adopted. |
| 6 | Chapter - 6 | Management Structure and Key Personnel | • This chapter shall describe the overall management approach toward planning and implementing the business by referring to the RFP document. Include an organizational chart for the management of the project describing the relationship of key positions and designations. Provide a spreadsheet to show the activities of each person and the time allocated for his/her involvement.<br>• Provide CVs for key personnel that will be provided to support the implementation of this project. CVs should demonstrate the relevant academic qualifications, specialized training, and pertinent work experience in areas relevant to the Scope of the business.<br>• The proposer is strongly encouraged to include information regarding the percentage of women participants. While this will not be a factor of evaluation. |
| 7 | Chapter -7 | Proposal Exceptions. | This Chapter shall discuss any exceptions or requested changes that Proposer has to the ANRS PESFA RFP conditions, requirements and agreement. If there are no exceptions noted, it is assumed the Proposer will accept all conditions and requirements identified in the RFP document. Items not excepted will not be open to later negotiation. |
| 8 | Chapter - 8 | Proposal Costs Sheet and Rates. | This Chapter shall include the proposed costs to implement the business desired. Include any cost and price information. |
| 9 | Appendices | | In addition to the legal documents, all necessary support documents for the proposal should annex here. |

# ANNEX - 2

## Financial Proposal Form

| Name of proposer: | [Insert Name of proposer] | Date: | Select date |
|---|---|---|---|
| RFP reference: | | | |

The proposer is required to prepare the Financial Proposal following the below format and submit it in an envelope separate from the Technical Proposal as indicated in the Instruction to the proposer.
The components comprising the total price must provide sufficient detail to allow to determine compliance of the proposal with requirements as per this RFP document. The proposer shall include a complete breakdown of the cost elements associated with each line item and those costs associated with any proposed subcontract/sub-awards (separate breakdown) for the duration of the contract. Provide separate figures for each functional grouping or category.

The financial proposal must show financial stability, Average Gross Turnover, Average Adjusted Tangible Net Worth, Average Current Ratio, Proposed Share amount, Proposed Solution for shortage of Currency to import materials the following documents:

1. A summary of the price in words and figures

**i.** **Price breakdown:** The price must cover all the business to be provided and must itemize the following:

   a. costs required for purposes of the assignment not covered in the foregoing or beneath paragraphs such as communication, printing, and dispatching of reports to be produced during the assignment, rental and freight of any instruments or equipment required to be provided by the proposer for the business, office accommodation, investigations, surveys, etc.
   b. Summary of the total cost for the services proposed.

**ii.** **Schedule of financing:** Proposed schedule of financing might be expressed by the proposer, The financing schedule must be linked to your technical component. All prices/rates quoted must be inclusive of all taxes.

In case two (2) proposals are evaluated and found to be equal in terms of technical competency and price, ANRS PESFA will accept the company that is either women-owned. In the case that both companies are men/women-owned ANRS PESFA will request the best and final offer from both proposers and shall make a final comparison of the competing proposers.

# ANNEX – 3
# Technical specification for the required type of Transformer

Distribution Transformer spec. minimum requirement

## (25, 50, 100, 200, 315) KVA (33 and 15/0.4) kV POLE MOUNTED DISTRIBUTION TRANSFORMERS

### 1. GUARANTEED TECHNICAL PARTICULARS FOR 25KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Out-door<br>Pole mounted | |
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |

| No | Item | Unit | Requirement | |
|---|---|---|---|---|
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | Maximum Height above sea level at which tests are performed, | meters | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **25** | |
| 15 | **Nominal system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 4.5 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |

| No | Item | Unit | Requirement | |
|---|---|---|---|---|
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | ≤0.15 | |
| 27 | Full load loss ,W | kW | ≤0.57 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |

| No | Item | Unit | Requirement | |
|---|---|---|---|---|
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level | kV | 70 | |
| 31.4 | lightning impulse level | kV | 170 | |
| 31.5 | clearance across insulator (at 1000m) | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | mm | 900 | |
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV,min | 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | mm | 400 | |
| 32.7 | creep age distance | mm | 900 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |

| No | Item | Unit | Requirement | |
|---|---|---|---|---|
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <46 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | steel | |
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

## 2. GUARANTEED TECHNICAL PARTICULARS FOR 50KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Out-door<br>Pole mounted | |
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | height above sea level the tests are performed , in meter | | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **50** | |
| 15 | **Rated system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 4.5 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | 0.22 | |
| 27 | Full load loss ,W | kW | 1.0 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level | kV | 70 | |
| 31.4 | lightning impulse level | kV | 170 | |
| 31.5 | clearance across insulator | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | mm | 900 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | mm | | |
| 32.7 | Min. creep age distance | mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <44 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | steel | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

## 3. GUARANTEED TECHNICAL PARTICULARS FOR 100KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Out door<br>Pole mounted | |
| 4 | Equipment Standard | IEC | 60076 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | (maximum),height above sea level Meter | | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **100** | |
| 15 | **Rated system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 4.5 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | 0.36 | |
| 27 | Full load loss ,W | kW | 1.7 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to $75^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level (at 1000 m) | kV | 50 | |
| 31.4 | lightning impulse level (at 1000 m) | kV | 125 | |
| 31.5 | clearance across insulator (at 1000m) | Mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | Mm | 900 | |
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | Mm | | |
| 32.7 | Min. creep age distance | Mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <44 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | Steel | |
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | Height | mm | | |
| 43.4 | Depth | mm | | |
| 43.5 | Width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

## 4. GUARANTEED TECHNICAL PARTICULARS FOR 200KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Out door<br>Pole mounted | |
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | height above sea level the tests are performed in meter | | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **200** | |
| 15 | **Nominal system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 5.0 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | ≤0.6 | |
| 27 | Full load loss ,W | kW | ≤2.7 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level | kV | 70 | |
| 31.4 | lightning impulse level | kV | 170 | |
| 31.5 | clearance across insulator (at 1000m) | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | mm | 900 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | mm | | |
| 32.7 | Minimum creep age distance | mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <46 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | steel | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

## 5. GUARANTEED TECHNICAL PARTICULARS FOR 315KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Out door<br>Pole mounted | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | height above sea level the tests are performed in meter | | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **315** | |
| 15 | **Rated system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 5.0 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | 0.82 | |
| 27 | Full load loss ,W | kW | 3.64 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level | kV | 70 | |
| 31.4 | lightning impulse level | kV | 170 | |
| 31.5 | clearance across insulator (at 1000m) | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | mm | 900 | |
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 32.6 | clearance across insulator | mm | | |
| 32.7 | Min. creep age distance | mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <44 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | steel | |
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

(400, 500,630, 800, 1250) KVA (33 and 15/0.4) kV system

GROUND or pole MOUNTED DISTRIBUTION TRANSFORMERS

## 6. GUARANTEED TECHNICAL PARTICULARS FOR 500KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Indoor, Ground Mounted | |
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | Maximum height above sea level in which the tests are performed | Meters | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **500** | |
| 15 | **Nominal system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 6.0 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | ≤1.18 | |
| 27 | Full load loss ,W | kW | ≤5.4 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level (at 1000 m) | kV | 70 | |
| 31.4 | lightning impulse level (at 1000 m) | kV | 170 | |
| 31.5 | clearance across insulator (at 1000m) | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 31.7 | creep age distance | mm | 900 | |
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | mm | | |
| 32.7 | Min. creep age distance | mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <44 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 43 | Transformer tank, material | | steel | |
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

## 7. GUARANTEED TECHNICAL PARTICULARS FOR 400KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Indoor, Ground Mounted | |
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | Maximum height above sea level at which the tests are performed | meters | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **400** | |
| 15 | **Rated system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 6.0 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | ≤0.99 | |
| 27 | Full load loss ,W | kW | ≤4.5 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level | kV | 70 | |
| 31.4 | lightning impulse level | kV | 170 | |
| 31.5 | clearance across insulator | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | mm | 900 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | mm | | |
| 32.7 | Min. creep age distance | mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <44 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | steel | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

## 8. GUARANTEED TECHNICAL PARTICULARS FOR 630KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Indoor, Ground Mounted | |
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | Maximum height above sea level at which the tests are performed | meters | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **630** | |
| 15 | **Rated system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 6.0 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | ≤1.45 | |
| 27 | Full load loss ,W | kW | ≤6.4 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level | kV | 70 | |
| 31.4 | lightning impulse level | kV | 170 | |
| 31.5 | clearance across insulator | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | mm | 900 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | mm | | |
| 32.7 | Min. creep age distance | mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <44 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | steel | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

## 9. GUARANTEED TECHNICAL PARTICULARS FOR 800KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Indoor, Ground Mounted | |
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | Maximum height above sea level at which the tests are performed | meters | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **800** | |
| 15 | **Rated system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 17 | Principal tapping | kV | **33** | |
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 6.5 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 25.1 | oil / top | °C | 55 | |
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | ≤1.65 | |
| 27 | Full load loss ,W | kW | ≤8.0 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level | kV | 70 | |
| 31.4 | lightning impulse level | kV | 170 | |
| 31.5 | clearance across insulator | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | mm | 900 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 32 | **Secondary** | | | |
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | mm | | |
| 32.7 | Minimum creep age distance | mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <44 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | steel | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 43.1 | Transformer total mass | kg | | |
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |

## 10. GUARANTEED TECHNICAL PARTICULARS FOR 1250KVA DISTRIBUTION TRANSFORMER.

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| | **I. General** | | | |
| 1 | Manufacturer | | | |
| 2 | Country of manufacture | | | |
| 3 | Kind of installation | | Pole mounted | |
| 4 | Equipment Standard | IEC | 60076 | |
| 5 | No. of phases | | three-phase | |
| 6 | Type of tank | | Bolted Cover | |
| 7 | No. of windings | | Two | |
| 8 | Vector group symbol | | Dyn5 | |
| 9 | Tapping range | ± % | 2.5 | |
| 10 | Number of steps | ± steps | +2, -2 | |
| 11 | Maximum height above sea level at which the tests are performed | meters | 3000 | |
| 12 | Cooling method | | ONAN | |
| 13 | Specification of oil) | IEC | 60296 | |
| | **II. Ratings** | | | |
| 14 | Rated power | kVA | **1250** | |
| 15 | **Rated system voltage** | | | |
| 15.1 | primary UN1 | kV | **33** | |
| 15.2 | secondary UN2 | kV | 0.4 | |
| 16 | Frequency | Hz | 50 | |
| 17 | Principal tapping | kV | **33** | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 18 | Maximum Continuous System withstand Voltage | kV | 36 | |
| 19 | Impedance voltage at rated power | % | 6.5 | |
| 20 | **HV Windings** | | | |
| 20.1 | Material, wire or strip | | Copper wire/strip | |
| 20.2 | Insulation | | | |
| 20.3 | Power frequency withstand voltage | kV(rms) | 70 | |
| 20.4 | Rated lightning, impulse withstand voltage | kV(peak) | 170 | |
| 21 | **LV Windings** | | | |
| 21.1 | Material, wire or strip | | Copper wire/strip | |
| 21.2 | Insulation | | | |
| 21.3 | Power frequency withstand voltage | kV(rms) | 3 | |
| 21.4 | Rated lightning, impulse withstand voltage | kV(peak) | 6 | |
| 21.5 | Magnetic flux density (at rated voltage and frequency) | Tesla | 1.7 | |
| 22 | Core Material | | CRGO | |
| 22.1 | Core Loss figure, Watt/kg | | | |
| | **III. Operation Details** | | | |
| 23 | Ambient temperature (max.) | °C | 45 | |
| 24 | Ambient temperature (average) | °C | 30 | |
| 25 | Temperature rise limit (at 3000 m ) | | | |
| 25.1 | oil / top | °C | 55 | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 25.2 | windings / average | °C | 60 | |
| 25.3 | windings hot spot | °C | 68 | |
| 26 | No-load loss at rated voltage and frequency | kW | ≤2.3 | |
| 27 | Full load loss ,W | kW | ≤11.0 | |
| 28 | Rated voltage at full load (P.F=0.95) | kV | | |
| 29 | Efficiency referred to 75$^{o}$C at rated voltage and frequency | | | |
| 29.1 | 100% rated output and P.F= 1 (%) | | | |
| 29.2 | 100% rated output and P.F= 0.95 (%) | | | |
| 30 | No load current as percent of rated current | | | |
| 30.1 | at 90% voltage (%) | | | |
| 30.2 | at 100% voltage (%) | | | |
| | **IV. Bushings** | | | |
| 31 | **Primary** | | | |
| 31.1 | manufacturer | | | |
| 31.2 | rated current | A | 630 | |
| 31.3 | power frequency test level | kV | 70 | |
| 31.4 | lightning impulse level | kV | 170 | |
| 31.5 | clearance across insulator | mm | 400 | |
| 31.6 | adjustable arcing horns | yes/no | Yes | |
| 31.7 | creep age distance | mm | 900 | |
| 32 | **Secondary** | | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 32.1 | Manufacturer | | | |
| 32.2 | Type (DIN type or eqvt.) | | Yes | |
| 32.3 | rated current | A | 1000 | |
| 32.4 | power frequency test level (at 1000 m) | kV | min. 8 | |
| 32.5 | lightning impulse level (at 1000 m) | kV | | |
| 32.6 | clearance across insulator | mm | | |
| 32.7 | Min. creep age distance | mm | 60 | |
| 32.8 | **Metal oxide Lightning Arrestor** | kV,kA | 18,12 | |
| | **V. Tests** | | | |
| 33 | Routine tests: IEC 60076 and Specifications | | on each unit | |
| 34 | Separate source over-voltage withstand test | | on each unit | |
| 35 | Induced over voltage withstand test, | | on each unit | |
| 36 | test voltage / primary (tap 1) (IEC test standard) | kV | Yes | |
| 37 | test voltage / secondary (IEC test standard) | kV | Yes | |
| 38 | Type tests: IEC 60076 and Specifications | | on one unit | |
| 39 | test voltage / full wave (IEC test standard) | kV | Yes | |
| 40 | test voltage / chopped wave (IEC test standard) | kV | Yes | |
| 41 | Heat-run test | | on one unit | |
| 42 | Noise level at a measuring distance of 0.3meter | dB(A) | <44 | |
| | **VI. Materials, Masses, Measures and Drawings** | | | |
| 43 | Transformer tank, material | | steel | |
| 43.1 | Transformer total mass | kg | | |

| No | Item | Unit | Requirement | Bid Offer |
|---|---|---|---|---|
| 43.2 | Overall dimensions including bushings: | | | |
| 43.3 | height | mm | | |
| 43.4 | depth | mm | | |
| 43.5 | width | mm | | |
| 43.6 | Thickness of tank plate | | | |
| 43.7 | Top | mm | | |
| 43.8 | Bottom | mm | | |
| 43.9 | Sides | mm | | |
| 43.1 | Colour of transformer | | Grey | |
| 43.1 | Thickness of surface treatment | µm | 140 | |
| 44 | Drawing of dimensions | No. | | |
| 45 | Pamphlet | No. | | |