REPUBLIC OF KENYA

AFRICAN DEVELOPMENT BANK GROUP

MINISTRY OF EDUCATION | STATE DEPARTMENT FOR TECHNICAL, VOCATIONAL EDUCATION & TRAINING

SUPPORT TO TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING AND ENTREPRENEURSHIP (TVETE) PROJECT – (GOK/AFDB TVET PHASE III PROJECT)

OPEN COMPETITIVE BIDDING (INTERNATIONAL) (OCBI)

LOT 2 - TENDER FOR SUPPLY, INSTALLATION, CALIBRATION, COMMISSIONING AND TRAINING ON THE USE AND MAINTENANCE OF MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE– NYERI COUNTY AND AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE – NANDI COUNTY

OCBI NO: OCBI/TVETE PHASE III/EQUIP/48/24-25

COUNTRY: KENYA

LOAN NO.: ADF No. 2100150054442

ISSUED ON: JUNE, 2025

African Development Bank
Standard Bidding Document
Goods
(One-Envelope Bidding Process)

August 2021

Foreword

This Standard Bidding Document (SBD) for Goods has been prepared by the African Development Bank Group (AfDB). This SBD derives from the Master bidding document for the procurement of Goods, prepared by the participating Multilateral Development Banks and International Financing Institutions.

This SBD has been updated to reflect the African Development Bank's Procurement Framework as amended from time to time. This SBD is applicable to the procurement of Goods funded by AfDB financed projects whose Financing Agreement makes reference to the Procurement Framework.

Preface

This Standard Bidding Document (SBD) for Goods has been prepared for use in contracts financed by the African Development Bank Group (AfDB). This SBD is to be used for the procurement of goods through Open Competitive Bidding (International) (OCBI) or Limited Competitive Bidding (LCB) methods, using one (1) envelope bidding process in projects that are financed in whole, or in part, by the AfDB "the Bank".

This SBD provides a wide range of Bid Evaluation Criteria or factors other than the quoted prices enabling the Purchaser to specify criteria as appropriate based on the type, nature, value, time for completion, contractual conditions, complexity, risk, and market conditions of Goods and Related Services to be procured and objectives and outcomes to be achieved. Criteria other than 'Price' (which may consider Life-Cycle-Cost, when appropriate), may include 'Quality' to compare and assess the degree to which Goods and Related services meet or exceed the technical and other requirements, 'Risk' and its mitigation measures, and when permitted 'Sustainability' to address social, economic and environmental aspects, 'Innovation' to assess innovation in the design and/or delivery of Goods and Related Services, etc. Only such criteria as appropriate for each procurement will be specified.

The Bank's procurement policy supports Borrowers in obtaining optimal value for money, to achieve this objective, selecting the appropriate approach that would be the best 'fit for purpose" is critical. Depending upon the nature, type, value, complexity and outcome to be achieved, procurement may adopt price alone as a factor for selection e.g. for very small value and simple procurement, or other relevant factors besides price can be considered to determine the evaluated cost of a bid for large value and complex procurement. The Bank recommends that as far as practical minimum pass-fail, and monetarily quantifiable criteria shall be adopted in the determination of the lowest evaluated bid and for evaluation of the qualification of Bidders to determine their technical capability and financial resources to perform the contract.

This SBD is based on application of only the pass-fail and monetarily quantifiable criteria for procurement of goods. The Bank's SBD based on a 2-Envelope procedure is also available for use when appropriate as per the guidance provided therein.

The Bank's Procurement Framework stipulates that bidders may send copies of their communications with the Borrowers to the Bank or write to the Bank directly when, Borrowers do not respond promptly, any questions on any issues regarding

the implementation of Bank funded projects, or when the communication is a complaint against the Borrower. In this regard, if a bidder wishes to protest against a decision made by a Borrower or the Bank with regards to the procurement process or wishes to inform the Bank that the Bank's procurement rules and/or provisions of the bidding documents have not been complied with, an email can be sent to the following address:

Email: procurementcomplaints@afdb.org

To obtain further information on procurement under African Development Bank-funded projects or for question regarding the use of this SBD, contact:

Fiduciary Services & Inspection Department (SNFI)
African Development Bank (www.afdb.org)
Headquarters – Abidjan (Côte d'Ivoire)
5 Avenue Joseph Anoma
01 B.P. 1387, Abidjan 01
Côte d'Ivoire
Tel.: +225 – 27 20 26 39 00
E-mail: procurementpolicy@afdb.org

Standard Bidding Document

Summary

Specific Procurement Notice – Invitation for Bids (IFB)

The template attached is the Specific Procurement Notice for Invitation for Bids, one-envelope Bidding process. This is the template to be used by the Borrower.

SBD for Procurement of Goods (One-Envelope Bidding Process)

Part 1 – Bidding Procedures

Section I - Instructions to Bidders (ITB)

This Section provides information to help Bidders prepare their Bids. It is based on a one-envelope Bidding process. Information is also provided on the submission, opening, and evaluation of Bids and on the award of Contracts. **Section I contains provisions that are to be used without modification.**

Section II - Bid Data Sheet (BDS)

This Section includes provisions that are specific to each procurement and that supplement Section I, Instructions to Bidders.

Section III - Evaluation and Qualification Criteria

This Section specifies the criteria for evaluation of Bids and qualification of Bidders to perform the contract to determine the successful Bidder or Bidders that are substantially responsive to the bidding document and whose Bid (s) offer the lowest evaluated cost to the Purchaser. Only such criteria will be specified as determined appropriate for each procurement.

Section IV - Bidding Forms

This Section includes the forms for the Bid submission, Price Schedules, Bid Security, and the Manufacturer's Authorization to be completed and submitted by the Bidder as part of its Bid.

Section V - Eligible Countries

This Section contains information regarding eligible countries.

Section VI - Fraud and Corruption

This section includes the fraud and corruption provisions which apply to this Bidding process.

Part 2 – Supply Requirements

Section VII - Schedule of Requirements

This Section includes the List of Goods and Related Services, the Delivery and Completion Schedules, the Technical Specifications and the Drawings that describe the Goods and Related Services to be procured.

Part 3 – Conditions of Contract and Contract Forms

Section VIII - General Conditions of Contract (GCC)

This Section includes the general clauses to be applied in all contracts. **The text of the clauses in this Section shall not be modified.**

Section IX - Special Conditions of Contract (SCC)

This Section consists of Contract Data and Specific Provisions which contains clauses specific to each contract. The contents of this Section modify or supplement, but not over-write, the General Conditions and shall be prepared by the Purchaser.

Section X - Contract Forms

This Section contains the Letter of Acceptance, Contract Agreement and other relevant forms.

Specific Procurement Notice

Invitation for Bids [IFB]

Goods

(One-Envelope Bidding Process)

IFB NUMBER: OCBI/TVETE PHASE III/EQUIP/48/24-25

PURCHASER: MINISTRY OF EDUCATION – STATE DEPARTMENT FOR TECHNICAL, VOCATIONAL EDUCATION & TRAINING

PROJECT: SUPPORT TO TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING AND ENTREPRENEURSHIP (TVETE) PROJECT – (GOK/AFDB TVET PHASE III PROJECT)

CONTRACT TITLE: LOT 2 - TENDER FOR SUPPLY, INSTALLATION, CALIBRATION, COMMISSIONING AND TRAINING ON THE USE AND MAINTENANCE OF MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE– NYERI COUNTY AND AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE – NANDI COUNTY

COUNTRY: KENYA

LOAN NO.: ADF No. 2100150054442

PROCUREMENT METHOD: OPEN COMPETITIVE BIDDING (INTERNATIONAL) (OCBI)

OCBI NO: OCBI/TVETE PHASE III/EQUIP/48/24-25

ISSUED ON: JUNE, 2025

1. The Government of the Republic of Kenya has financing from the African Development Fund hereinafter called the Bank toward the cost of the Support to Technical and Vocational Education and Training and Entrepreneurship (TVETE) Project – (GOK/AfDB TVET PHASE III PROJECT), and intends to apply part of the proceeds toward payments under the contract for Lot 2 - Supply, Installation, Calibration, Commissioning and Training on the use and Maintenance of Mechanical and Automotive Engineering Training Equipment.

2. For this contract, the Borrower shall process the payments using the Direct Payment disbursement method, as defined in the Bank's Disbursement Guidelines and procedures for Investment Project Financing, except for those payments, which the contract provides to be made through letter of credit.

3. Bidders may Bid for Lots, as applicable and, as further defined in the bidding document. Bidders wishing to offer discounts in case they are awarded more than one Lot as applicable will be allowed to do so, provided those discounts are included in the Letter of Bid.

4. The Ministry of Education - State Department for Vocational and Technical Training now invites sealed Bids from eligible Bidders for Tender for Supply, Installation, Calibration, Commissioning and Training on the Use and Maintenance of Mechanical Engineering Equipment to Mukurwe-Ini Technical Training Institute– Nyeri County and Automotive Engineering Equipment to Aldai Technical Training Institute – Nandi County

5. Bidding will be conducted through the Open Competitive Bidding (International), (OCBI) method as specified in the Bank's Procurement Framework[2] and is open to all eligible bidders as defined in the Procurement Framework.

6. Interested eligible Bidders may obtain further information and inspect the bidding document during office hours 0800 to 1700 hours at the address given below:

Ministry of Education- State Department for Vocational and Technical Training
The Project Coordinator – GoK/AfDB TVETE (GoK/AfDB TVET PHASE III) Project
Teleposta Towers, Kenyatta Avenue, 24th Floor, Room 2412
NAIROBI, KENYA.
Email: procurement.afdb@education.go.ke

5. The bidding document in English may be purchased by interested eligible Bidders upon the submission of a written application to the address below and upon payment of a nonrefundable fee of **Kenya Shillings One Thousand (Kes 1,000) or its equivalent in freely convertible currency**, to the Cashier **Ministry of Education- State Department for Vocational and Technical Training, Harambee Avenue, Jogoo House B, 9th Floor Room 925.** Tender documents may also be viewed and downloaded free of charge from the Ministry of Education website

https://www.education.go.ke/. Those who choose to download the tender document and intend to submit a bid **MUST** register their details at the office of the Project Coordinator, Teleposta Towers, Kenyatta Avenue, 24th Floor, Room 2412 or through email **procurement.afdb@education.go.ke** for the purpose of receiving any other information, clarifications and addenda**.**

6. The Tenderer shall chronologically serialize all pages of the Tender documents submitted.

7. Bids must be delivered to the address below on or before **7th August 2025, 10.00 am Local Time.** Electronic Bidding will **NOT** be permitted. Late Bids will be rejected. Bids will be publicly opened in the presence of the Bidders' designated representatives and anyone who chooses to attend at the address below:

Ministry of Education- State Department for Technical, Vocational Education and Training
Directorate of Vocational, Technical Education
Teleposta Towers, Kenyatta Avenue,
24th Floor, Room 2412
P.O. Box 9583 – 00200 Nairobi
Telephone: +254 020 318581
Tel/Fax: 254 020 2251991
NAIROBI, KENYA

8. Bids shall be valid for a bid period of 180 days after bid opening. All Bids must be accompanied by a bid security of **Kenya Shillings Four Million (KES 4,000, 000) or its equivalent in any freely convertible currency.** The bid security shall **be in the form of a bank guarantee** and must be from a reputable commercial bank supervised by the Central bank of Kenya.

9. The address(es) referred to above is (are):

Ministry of Education
Directorate of Technical Education
The Project Coordinator – GoK/AfDB TVETE (GoK/AfDB TVET PHASE III) Project
Teleposta Towers, Kenyatta Avenue, 24th Floor
P.O. Box 9583 – 00200 Nairobi
Telephone: +254 020 318581
Tel/Fax: 254 020 2251991
NAIROBI, KENYA
Email: procurement.afdb@education.go.ke
Website: https://www.education.go.ke/

Standard Bidding Document (One-Envelope Bidding Process)

PROCUREMENT OF:

LOT 2 - TENDER FOR SUPPLY, INSTALLATION, CALIBRATION, COMMISSIONING AND TRAINING ON THE USE AND MAINTENANCE OF MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE– NYERI COUNTY AND AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE – NANDI COUNTY

OCBI No: OCBI/TVETE PHASE III/EQUIP/48/24-25

PROJECT: SUPPORT TO TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING AND ENTREPRENEURSHIP (TVETE) PROJECT – (GOK/AFDB TVET PHASE III PROJECT)

PURCHASER: MINISTRY OF EDUCATION – STATE DEPARTMENT FOR TECHNICAL, VOCATIONAL EDUCATION AND TRAINING

COUNTRY: KENYA

ISSUED ON: JUNE, 2025

Standard Bidding Document

Table of Contents

Part 1: Bidding Procedures

Section I - Instructions to Bidders

Contents

Section I. Instructions to Bidders

General

1. Scope of Bid

1.1 In connection with the Specific Procurement Notice, Invitation for Bids (IFB), specified **in the Bid Data Sheet (BDS),** the Purchaser, as **specified in the BDS,** issues this bidding document for the supply of Goods and, if applicable, any Related Services incidental thereto, as specified in Section VII, Schedule of Requirements. The name, identification and number of items, lots or combination of lots (packages) of this IFB are **specified in the BDS.**

1.2 Throughout this bidding document:

(a) the term "in writing" means communicated in written form (e.g. by mail, e-mail, fax, including if **specified in the BDS**, distributed or received through the electronic-procurement system used by the Purchaser) with proof of receipt;

(b) if the context so requires, "singular" means "plural" and vice versa; and

(c) "Day" means calendar day, unless otherwise specified as "Business Day". A Business Day is any day that is an official working day of the Borrower. It excludes the Borrower's official public holidays.

2. Source of Funds

2.1 The Borrower or Recipient (hereinafter called "Borrower") **specified in the BDS** has applied for or received financing (hereinafter called "funds") from the Specific Financing Institution named in the BDS (hereinafter called "the Bank") in an amount **specified in the BDS,** toward the project named **in the BDS.** The Borrower intends to apply a portion of the funds to eligible payments under the contract for which this bidding document is issued.

2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the Bank in accordance with the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the Loan account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import is prohibited by decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

3. Fraud and Corruption

3.1 The Bank requires compliance with the Bank's Integrity Framework comprising the African Development Bank Group's Sanctions Procedures, the Bank's Whistleblowing and Complaints Policy, the Bank's Procurement Policy under the Procurement Framework and any other applicable Policies and Procedures including their updates regarding corrupt and fraudulent practices as set forth in Section VI, Fraud and Corruption.

3.2 In further pursuance of this policy, Bidders shall permit and shall cause their agents (where declared or not), subcontractors, sub consultants, service providers, suppliers, and their personnel, to permit the Bank to inspect all accounts, records and other documents relating to any, prequalification process, bid submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

4. Eligible Bidders

4.1 A Bidder may be a firm that is a private entity, a state-owned enterprise or institution subject to ITB 4.6, or any combination of such entities in the form of a joint venture, consortium, or association (JVCA) hereinafter called JV, under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, consortium, or association (JV): a) Unless otherwise **specified in the BDS**, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms; b) The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution; c) The maximum number of members proposed in a JV shall not exceed the number **specified in the BDS**, or the number derived from the percentage specified under ITB 4.1 (d), whichever is smaller unless both are equal, in which case anyone shall apply; and d) Participation by value of the contract as share of each of the JV partner (member) shall not be less than the percentage **specified in the BDS**. In case of any inconsistency between ITB 4.1 c) and ITB 4.1 d) that both cannot be applied simultaneously, the latter shall prevail.

4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder:

(a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or

(b) receives or has received any direct or indirect subsidy from another Bidder; or

(c) has the same legal representative as another Bidder; or

(d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Purchaser regarding this Bidding process; or

(e) or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods, or works if any, that are the subject of the Bid; or

(f) or any of its affiliates has been hired (or is proposed to be hired) by the Purchaser or Borrower for the Contract implementation; or

(g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project **specified in the BDS** ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or

(h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the Contract, and/or the Bid evaluation process of such Contract; or (ii) would be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the Bidding process and execution of the Contract.

4.3 A firm that is a Bidder (either individually or as a JV member) shall not participate in more than one Bid, except for permitted alternative Bids. This includes participation as a subcontractor. Such participation shall result in the disqualification of all Bids in which the firm is involved. A firm that is not a Bidder or a JV member, may participate as a subcontractor in more than one Bid.

4.4 A Bidder and all parties constituting the Bidder including any subcontractors or suppliers shall have the nationality of an eligible country of the Bank in accordance with the Bank's Procurement Policy for the Bank Group Funded Operation described under the Bank's Procurement Framework, and as listed in Section V, Eligible Countries subject to the restrictions pursuant to ITB 4.8. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of

incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or subconsultants for any part of the Contract including related Services.

4.5 A Bidder that has been sanctioned by the Bank, pursuant to the Bank's Integrity Framework and in accordance with its prevailing sanctions policies and procedures as set forth in the Bank's Integrity Framework as described in Section VI paragraph 2.2 d, shall be ineligible to be prequalified for, bid for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address **specified in the BDS**.

4.6 Bidders that are state-owned enterprises or institutions in the Purchaser's Country may be eligible to compete and be awarded a Contract(s) only if they can establish, in a manner acceptable to the Bank, that they: (i) are legally and financially autonomous; (ii) operate under commercial law; and (iii) are not under supervision of the Purchaser.

4.7 A Bidder shall not be under suspension from Bidding by the Purchaser as the result of the operation of a Bid–Securing Declaration.

4.8 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

4.9 A Bidder shall provide such documentary evidence of eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

4.10 In case a prequalification process has been conducted prior to the bidding process, this bidding is open only to prequalified Bidders.

4.11 A firm that is under a sanction of debarment by the Borrower from being awarded a contract is eligible to participate in this procurement, unless the Bank, at the Borrower's request, is satisfied that the debarment;

(a) relates to fraud or corruption; and

(b) followed a judicial or administrative proceeding that afforded the firm adequate due process.

5. Eligible Goods and Related Services

5.1 All the Goods and Related Services to be supplied under the Contract and financed by the Bank shall have their country of origin in an eligible country of the Bank in accordance with the Bank's Procurement Policy for Bank Group Funded Operations described under the Bank's Procurement Framework, and as listed in Section V, Eligible Countries.

5.2 For purposes of this ITB, the term "goods" includes commodities, raw material, machinery, equipment, and industrial plants; and "related services" includes services such as insurance, installation, training, and initial maintenance.

5.3 The term "origin" means the country where the goods have been mined, grown, cultivated, produced, manufactured or processed; or, through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

5.4 The nationality of the firm that produces, assembles, distributes, or sells the Goods shall not determine their origin.

Contents of the Bidding Document

6. Sections of Bidding Document

6.1 The bidding document consist of Parts 1, 2, and 3, which include all the sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

- Section I - Instructions to Bidders (ITB)
- Section II - Bidding Data Sheet (BDS)
- Section III - Evaluation and Qualification Criteria
- Section IV - Bidding Forms
- Section V - Eligible Countries
- Section VI - Fraud and Corruption

PART 2 Supply Requirements

- Section VII - Schedule of Requirements

PART 3 Contract

- Section VIII - General Conditions of Contract (GCC)
- Section IX - Special Conditions of Contract (SCC)
- Section X - Contract Forms

6.2 The Specific Procurement Notice, Invitation for Bids (IFB), issued by the Purchaser is not part of this bidding document.

6.3 Unless obtained directly from the Purchaser, the Purchaser is not responsible for the completeness of the document, responses to requests for clarification, the Minutes of the pre-Bid meeting (if any), or Addenda to the bidding document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Purchaser shall prevail.

6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding document and to furnish with its Bid all information or documentation as is required by the bidding document.

7. Clarification of Bidding Document

7.1 A Bidder requiring any clarification of the bidding document shall contact the Purchaser in writing at the Purchaser's address **specified in the BDS**. The Purchaser will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of Bids within a period **specified in the BDS.** The Purchaser shall forward copies of its response to all Bidders who have acquired the bidding document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so **specified in the BDS**, the Purchaser shall also promptly publish its response at the web page identified **in the BDS**. Should the clarification result in changes to the essential elements of the bidding document, the Purchaser shall amend the bidding document following the procedure under ITB 8 and ITB 22.2.

8. Amendment of Bidding Document

8.1 At any time prior to the deadline for submission of Bids, the Purchaser may amend the bidding document by issuing addenda.

8.2 Any addendum issued shall be part of the bidding document and shall be communicated in writing to all who have obtained the bidding document from the Purchaser in accordance with ITB 6.3. The Purchaser

shall also promptly publish the addendum on the Purchaser's web page in accordance with ITB 7.1.

8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2.

Preparation of Bids

9. Cost of Bidding

9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

10. Language of Bid

10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language **specified in the BDS.** Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into the language **specified in the BDS,** in which case, for purposes of interpretation of the Bid, such translation shall govern.

11. Documents Comprising the Bid

11.1 The Bid shall comprise the following including all forms specified under Section IV, duly completed by the Bidder:

(a) **Letter of Bid** prepared in accordance with ITB 12;

(b) **Price Schedules**: completed in accordance with ITB 12 and ITB 14;

(c) **Bid Security** or **Bid-Securing Declaration**, in accordance with ITB 19.1;

(d) **Technical Bid-Base Bid;**

(e) **Commercial Terms and Conditions**

(f) **Alternative Technical Bid**: if permissible, in accordance with ITB 13;

(g) **Authorization**: written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.3;

(h) **Qualifications**: documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the Contract if its Bid is accepted;

(i) **Bidder's Eligibility**: documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to bid;

(j) **Eligibility of Goods and Related Services:** documentary evidence in accordance with ITB 16, establishing the eligibility of the Goods and Related Services to be supplied by the Bidder;

(k) **Conformity**: documentary evidence in accordance with ITB 16 and ITB 31, and in support of above sub-paragraphs (d) and (e) of ITB 11.1 as necessary to establish that the Goods and Related Services, and Terms and Conditions of the Bid conform to requirements and provisions of the bidding document;

(l) **Manufacture's Authorization** in accordance with ITB 17.2 (a); and

(m) any other document required **in the BDS.**

11.2 In addition to the requirements under ITB 11.1, Bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement.

11.3 The Bidder shall furnish in the Letter of Bid information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

12. Letter of Bid and Price Schedules

12.1. The Letter of Bid and Price Schedules shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.3. All blank spaces shall be filled in with the information requested.

13. Alternative Bids

13.1. Unless otherwise **specified in the BDS,** alternative Bids shall not be considered.

14. Bid Prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Price Schedules shall conform to the requirements specified below.

14.2 All lots (contracts) and items must be listed and priced separately in the Price Schedules.

14.3 The price to be quoted in the Letter of Bid in accordance with ITB 12.1 shall be the total price of the Bid, excluding any discounts offered.

14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid, in accordance with ITB 12.1, ITB 14.6 and 14.7.

14.5 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise **specified in the BDS.** A Bid submitted with an adjustable price basis shall be treated as nonresponsive and shall be rejected, pursuant to ITB 30. However, if in accordance with **the BDS**, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a Bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.

14.6 In accordance with ITB 1.1, Bids are being invited for individual items, individual lots (contracts) or for any combination of lots (packages) as specified in **BDS.** Unless otherwise **specified in the BDS,** prices quoted shall correspond to 100% of the quantity for each individual item (of bids invited for individual items), 100 % of the items specified for each lot and to 100% of the quantities specified for each item of a lot (of bids invited for individual lots and combination of lots). Bidders wishing to offer discounts for the award of more than one individual item (of bids invited for individual items), for award of more than one lot (of bids invited for individual lots or combination of lots) shall specify in their Bid the price reductions, as applicable, to each item, to each individual lot, and to the combination of lots (package), as applicable or alternatively, to individual Contracts within the package provided in all cases how discounts will be applied to individual items is made clear. Discounts shall be submitted in accordance with ITB 14.4 and 14.6 with due regards to consequences of unclear or ambiguous discounts as per ITB 14.7 provided the Bids for all lots (contracts) are opened at the same time.

14.7 Discounts offered shall be clear and without any vagueness or ambiguity as no clarification shall be requested or permitted on this account after Bid submission. The Purchaser's decision on discounts will be based on the contents of the Bid itself, without recourse to any extrinsic evidence. If in the Purchaser's opinion, which will be final, a discount offered in the bid: (i) is seriously unclear, ambiguous or vaguely presented to such extent that it cannot be either interpreted or applied with reasonable accuracy, the Bid shall be rejected; (ii) has a minor discrepancy or unclarity which could be interpreted reasonably, the Purchaser in this case may decide to apply the discount as it deems reasonable and appropriate resulting in the lowest evaluated cost to the Purchaser. If the Bidder does not accept the Purchaser's decision based on any of the above, the Bid shall be rejected.

14.8 The terms EXW, CIP, and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce**,** as **specified in the BDS.**

14.9 Prices shall be quoted as specified in each Price Schedule included in Section IV, Bidding Forms as mentioned under (a), (b), (c) and (d) below. For a specific item of Goods only one Price Schedule shall be used as per applicable classification of that item i.e. whether the item is manufactured and offered within the Purchaser's country or to be imported pursuant to the award of contract or previously imported. No changes in the offered Price Schedule or classification shall be permitted after bid opening. Failure to follow these instructions may result in rejection of bids. The disaggregation of price components is required solely for the purpose of facilitating the comparison of Bids by the Purchaser. This shall not in any way limit the Purchaser's right to contract on any of the terms offered e.g. instead of taking delivery at the final destination, the delivery may be taken at ex-works or at the destination. Similarly, if bids have been invited on CIP destination price in addition to other terms e.g. FOB or FCA, etc. then at the Purchaser's option, the award may be made on such other terms instead of CIP Price although comparison and evaluation of bids shall still be based on CIP final destination prices. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Bank's Procurement Framework and as listed in Section V, Eligible Countries. Similarly, the Bidder may obtain insurance services from any eligible country in accordance with Bank Procurement Framework and as listed in Section V, Eligible Countries. BDS indicates if the "Final Destination" (project site) is different from the "Destination" and their addresses. Prices shall be entered in Price Schedules accordingly and in the following manner:

(a) For Goods manufactured in the Purchaser's Country:

(i) the price of the Goods quoted EXW (ex-works, ex-factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods;

(ii) any Purchaser's Country sales tax and other taxes which will be payable on the Goods if the Contract is awarded to the Bidder; and

(iii) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) **specified in the BDS.**

(b) For Goods manufactured outside the Purchaser's Country, to be imported:

(i) the price of the Goods, quoted CIP named place of destination, in the Purchaser's Country, as **specified in the BDS.** If "final destination" is the same as "destination" then CIP price under columns 6 and 7 of the Price Schedule form applicable for

Goods to be imported shall be quoted for named place of final destination;

(ii) the price for inland transportation, insurance, and other local services required to convey the Goods from the named place of destination to their final destination (Project Site) **specified in the BDS.** If named place of "final destination" is the same as "destination" then cost under (b) (ii) shall not be indicated under column 8 of the Price Schedule form applicable for Goods to be imported and will state "Not Applicable". But instead, CIP final destination price quoted as per (b) (i) above shall include such costs;

(c) For Goods manufactured outside the Purchaser's Country, already imported:

(i) the price of the Goods, including the original import value of the Goods; plus any mark-up (or rebate); plus any other related local cost, and custom duties and other import taxes already paid or to be paid on the Goods already imported;

(ii) the custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already imported;

(iii) the price of the Goods, obtained as the difference between (i) and (ii) above;

(iv) any Purchaser's Country sales and other taxes which will be payable on the Goods if the Contract is awarded to the Bidder; and

(v) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) **specified in the BDS.**

(d) For Related Services, other than inland transportation and other services required to convey the Goods to their final destination, whenever such Related Services are specified in the Schedule of Requirements, the price of each item comprising the Related Services (inclusive of any applicable taxes).

15. Currencies of Bid and Payment

15.1 The currency(ies) of the Bid and the currency(ies) of payments shall be the same. The Bidder shall quote in the currency of the Purchaser's Country the portion of the Bid price that corresponds to expenditures incurred in the currency of the Purchaser's Country, unless otherwise **specified in the BDS.**

15.2 The Bidder may express the Bid price in any currency. If the Bidder wishes to be paid in a combination of amounts in different currencies, it may

quote its price accordingly but shall use no more than three foreign currencies in addition to the currency of the Purchaser's Country.

16. Documents Establishing the Eligibility and Conformity of the Goods and Related Services

16.1 To establish the eligibility of the Goods and Related Services in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Bidding Forms.

16.2 To establish the conformity of the Goods and Related Services to the bidding document, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods conform to the technical specifications and standards specified in Section VII, Schedule of Requirements.

16.3 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.

16.4 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period **specified in the BDS** following commencement of the use of the goods by the Purchaser.

16.5 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.

17. Documents Establishing the Eligibility and Qualifications of the Bidder

17.1 To establish Bidder's eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid, included in Section IV, Bidding Forms.

17.2 The documentary evidence of the Bidder's qualifications to perform the Contract if its Bid is accepted shall establish to the Purchaser's satisfaction:

(a) that, if required **in the BDS**, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's

Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser's Country;

(b) that, if required **in the BDS**, in case of a Bidder not doing business within the Purchaser's Country, the Bidder is or will be (if awarded the Contract) represented by an Agent in the country equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and

(c) that the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.

18. Period of Validity of Bids

18.1. Bids shall remain valid for the Bid Validity period **specified in the BDS**. The Bid Validity period starts from the date fixed for the Bid submission deadline (as prescribed by the Purchaser in accordance with ITB 22.1). A Bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.

18.2. In exceptional circumstances, prior to the expiration of the Bid validity period, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 19, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid, except as provided in ITB 18.3.

18.3. If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial Bid validity period, the Contract price shall be determined as follows:

(a) in the case of fixed price contracts, the Contract price shall be the Bid price adjusted by the factor **specified in the BDS** to reflect any increase in the cost of inputs over the period starting from the date immediately after expiry of 56 days until the date of award;

(b) in the case of adjustable price contracts, no adjustment shall be made;

(c) in any case, Bid evaluation shall be based on the Bid price without taking into consideration the applicable correction from those indicated above.

19. Bid Security

19.1. The Bidder shall furnish as part of its Bid, either a Bid-Securing Declaration or a Bid Security amount, as **specified in the BDS,** in original form and, in the case of a Bid Security amount**,** in the amount and currency **specified in the BDS.**

19.2. A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.

19.3. If a Bid Security amount is specified pursuant to ITB 19.1, the Bid Security shall be a demand guarantee in any of the following forms at the Bidder's option:

(a) an unconditional guarantee issued by a bank or non-bank financial institution (such as an insurance, bonding or surety company);

(b) an irrevocable letter of credit;

(c) a cashier's or certified check; or

(d) another security **specified in the BDS**,

from a reputable source, and an eligible country. If an unconditional guarantee is issued by a non-bank financial institution located outside the Purchaser's Country, the issuing non-bank financial institution shall have a correspondent financial institution located in the Purchaser's Country to make it enforceable unless the Purchaser has agreed in writing, prior to Bid submission, that a correspondent financial institution is not required. In the case of a bank guarantee, the Bid Security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Purchaser prior to Bid submission. The Bid Security shall be valid for twenty-eight (28) days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 18.2.

19.4. If a Bid Security in amount or Bid-Securing Declaration is specified pursuant to ITB 19.1, any Bid not accompanied by a substantially responsive Bid Security in amount or Bid-Securing Declaration, whichever is required shall be rejected by the Purchaser as non-responsive.

19.5. If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the Contract and furnishing the Performance Security pursuant to ITB 46.

19.6. The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required Performance Security.

19.7. The Bid Security amount may be forfeited:

(a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder in the Letter of Bid, or any extension thereto provided by the Bidder; or

(b) if the successful Bidder fails to:

(i) sign the Contract in accordance with ITB 45; or

(ii) furnish a Performance Security in accordance with ITB 46.

19.8. The Bid Security amount or Bid- Securing Declaration of a JV must be in the name of the JV that submits the Bid. If the JV has not been legally constituted into a legally enforceable JV at the time of Bidding, the Bid Security amount or Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2.

19.9. If a Bid Securing Declaration is required **in the BDS**, pursuant to ITB 19.1, and

(a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Letter of Bid or any extension thereto provided by the Bidder; or

(b) if the successful Bidder fails to: sign the Contract in accordance with ITB 45; or furnish a performance security in accordance with ITB 46;

the Borrower may execute the Bid-Securing Declaration, as provided for **in the BDS**, and declare the Bidder ineligible to be awarded a contract by the Purchaser for a period of time as stated **in the BDS**.

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original of the documents comprising the Bid as described in ITB 11 and clearly mark it "ORIGINAL." Alternative Bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE." In addition, the Bidder shall submit copies of the Bid, in the number **specified in the BDS** and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 Bidders shall mark as "CONFIDENTIAL" information in their Bids which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.

20.3 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as **specified in the BDS** and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid where entries or

amendments have been made shall be signed or initialed by the person signing the Bid.

20.4 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

20.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

Submission and Opening of Bids

21. Sealing and Marking of Bids

21.1. The Bidder shall deliver the Bid in a single, sealed envelope (one-envelope Bidding process). Within the single envelope the Bidder shall place the following separate, sealed envelopes:

(a) in an envelope marked "ORIGINAL", all documents comprising the Bid, as described in ITB 11; and

(b) in an envelope marked "COPIES", all required copies of the Bid; and,

(c) if alternative Bids are permitted in accordance with ITB 13, and if relevant:

i. in an envelope marked "ORIGINAL -ALTERNATIVE", the alternative Bid; and

ii. in the envelope marked "COPIES – ALTERNATIVE BID" all required copies of the alternative Bid.

21.2. The inner and outer envelopes, shall:

(a) bear the name and address of the Bidder;

(b) be addressed to the Purchaser in accordance with ITB 22.1;

(c) bear the specific identification of this Bidding process indicated in ITB 1.1; and

(d) bear a warning not to open before the time and date for Bid opening.

21.3 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the Bid.

22. Deadline for Submission of Bids

22.1. Bids must be received by the Purchaser at the address and no later than the date and time **specified in the BDS.** When so **specified in the BDS**,

Bidders shall have the option of submitting their Bids electronically. Bidders submitting Bids electronically shall follow the electronic Bid submission procedures **specified in the BDS**.

22.2. The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the bidding document in accordance with ITB 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

23.1. The Purchaser shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 22. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

24.1. A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization (the power of attorney) in accordance with ITB 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be:

(a) prepared and submitted in accordance with ITB 20 and 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," or "MODIFICATION;" and

(b) received by the Purchaser prior to the deadline prescribed for submission of Bids, in accordance with ITB 22.

24.2. Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3. No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Letter of Bid or any extension thereof.

25. Bid Opening

25.1. Except as in the cases specified in ITB 23 and ITB 24.2, the Purchaser shall, at the Bid opening, publicly open and read out all Bids received by the deadline at the date, time and place **specified in the BDS** in the presence of Bidders' designated representatives and anyone who chooses to attend Any specific electronic Bid opening procedures required if

electronic bidding is permitted in accordance with ITB 22.1, shall be as **specified in the BDS.**

25.2. First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. If the withdrawal envelope does not contain a copy of the "power of attorney" confirming the signature as a person duly authorized to sign on behalf of the Bidder, the corresponding Bid will be opened. No Bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Bid opening.

25.3. Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Bid opening.

25.4. Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid opening.

25.5. Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Prices, per item, and/or per lot (contract) as applicable, including any discounts and alternative Bids; the presence or absence of a Bid Security, if required; and any other details as the Purchaser may consider appropriate.

25.6. Only Bids, alternative Bids and discounts that are opened and read out at Bid opening shall be considered further in the evaluation. The Letter of Bid and the Price Schedules are to be initialed by representatives of the Purchaser attending Bid opening in the manner **specified in the BDS.**

25.7. The Purchaser shall neither discuss the merits of any Bid nor reject any Bid (except for late Bids, in accordance with ITB 23.1).

25.8. The Purchaser shall prepare a record of the Bid opening that shall include, as a minimum:

(a) the name of the Bidder and whether there is a withdrawal, substitution, or modification;

(b) the Bid Price, per item, and/or per lot (contract) as applicable, including any discounts;

(c) any alternative Bids;

(d) the presence or absence of a Bid Security or Bid-Securing Declaration, if one was required.

25.9. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

Evaluation and Comparison of Bids

26. Confidentiality

26.1 Information relating to the evaluation of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with the Bidding process until the information on Intention to Award the Contract is transmitted to all Bidders in accordance with ITB 40.

26.2 Any effort by a Bidder to influence the Purchaser in the evaluation or contract award decisions may result in the rejection of its Bid.

26.3 Notwithstanding ITB 26.2, from the time of Bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the Bidding process, it should do so in writing.

27. Preliminary Examination of Bids

27.1 Prior to the detailed evaluation, pursuant to ITB 35, the Purchaser will conduct preliminary examination of all bids that have been received by the deadline for bid submission and opened at public bid opening as the first step towards determination of their substantial responsiveness to the bidding document. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB 11 without recourse to extrinsic evidence.

27.2 The Purchaser will verify and examine bids to determine whether they are complete, properly signed to bind the bidder, meet eligibility requirements of bidders, goods and services, bidders have no conflict of interest and have provided required bid validity, bid security or bid securing declaration, as required and other essential documents to complete the evaluation, and whether the bids are generally in order. Subject to ITB 28, Bids failing to meet the above requirements shall be rejected and not retained for further review.

28. Clarification of Bids

28.1 To assist in the examination, evaluation, comparison of the Bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the

Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the Bids, in accordance with ITB 32

28.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Purchaser's request for clarification, its Bid may be rejected.

29. Deviations, Reservations, and Omissions

29.1 During the evaluation of Bids, the following definitions apply:

(a) "Deviation" is a departure from the requirements specified in the bidding document;

(b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and

(c) "Omission" is the failure to submit part or all of the information or documentation required in the bidding document.

30. Determination of Responsiveness

30.1 Following rejection of Bids if any, pursuant to ITB 27 and ITB 28, as the next step, the remaining Bids will be further reviewed in detail to determine their substantial responsiveness. The Purchaser's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11.

30.2 A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:

(a) if accepted, would:

(i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or

(ii) limit in any substantial way, inconsistent with the bidding document, the Purchaser's rights or the Bidder's obligations under the Contract; or

(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

30.3 The Purchaser shall examine the technical aspects of the Bid in accordance with ITB 16 and ITB 17, ITB 30, ITB 31, the BDS if applicable, and Section III Evaluation and Qualification Criteria in particular, to confirm that all requirements of Section VII, Schedule of Requirements and

technical specifications have been met without any material deviation or reservation, or omission. To this end, in consideration of materiality of any deviations, reservations or omissions, Bids failing to meet the mandatory technical requirements or minimum pass-fail technical criteria or failing to substantially meet any other technical requirements of the biding document will be rejected.

30.4 The Purchaser shall similarly examine the commercial aspects of the bids including any deviations, other than technical specifications, submitted in response to the provisions of the bidding document, to determine if they conform to the terms and conditions of the draft contract and other documents included in the bidding document without any material deviation, reservation or omission, and establishment of materiality in such aspects will similarly risk rejection of the Bids.

30.5 If a Bid is not substantially responsive to the requirements of the bidding document, it shall be rejected by the Purchaser and not subsequently be made responsive by correction of the material deviation, reservation, or omission. All other bids determined substantially responsive will be retained for further evaluation.

31. Nonconformities, Errors and Omissions

31.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonconformities in the Bid.

31.2 Provided that a Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

31.3 Provided that a Bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component, and costs associated, if any, with non-material deviations, reservations and omissions to the requirements of the bidding documents in the manner **specified in the BDS**.

32. Correction of Arithmetical Errors

32.1 Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:

(a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected,

unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;

(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

32.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 32.1, shall result in the rejection of the Bid.

33. Conversion to Single Currency

33.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted in a single currency as **specified in the BDS.**

34. Margin of Preference

34.1 Unless otherwise **specified in the BDS**, no margin of domestic or regional preference shall apply. If a margin of preference applies, the application methodology shall be as specified in Section III, Evaluation and Qualification Criteria, and in accordance with the provisions stipulated in the Bank's Procurement Framework.

35. Evaluation of Bids

35.1 The Purchaser shall use the criteria and methodologies listed in this ITB and Section III, Evaluation and Qualification criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies, the Purchaser shall determine the successful Bid or Bids which has/have been determined to:

(a) be substantially responsive to the bidding document;

(b) offer the lowest evaluated total cost to the Purchaser for all items to be procured based on either a single Contract or all multiple Contracts combined, as the case may be, in accordance with the ITB 14.6 inviting bid prices and discounts, and provisions made in the Bidding Document for evaluation of bids and award of contract (s); and

(c) be offered by Bidder or Bidders that substantially meet the qualification criteria applicable for Contract or Contracts for which they are selected.

35.2 To evaluate a Bid, the Purchaser shall consider the following factors with respect to the Base Bid and Alternative Bid (s) (if the latter is permitted in the BDS), in accordance with the criteria and methodology described in Section III—Evaluation and Qualification Criteria:

(a) evaluation will be done for Items or Lots (contracts) or combination of Lots (Packages), as **specified in the BDS;** and the Bid Price as quoted in accordance with ITB 14;

(b) price adjustment for correction of arithmetic errors in accordance with ITB 32.1;

(c) price adjustment due to discounts offered in accordance with ITB 12.1, ITB 14.4, ITB 14.6 and ITB 14.7;

(d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 33;

(e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 31.3;

(f) the additional evaluation factors **specified in the BDS** if any, and Section III, Evaluation and Qualification Criteria; and

(g) price adjustment due to application of Margin of Preference, if applicable, as per ITB 34, BDS and Section III, Evaluation and Qualification Criteria.

35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.

35.4. If this bidding document allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated cost of the lot (contract) combinations, including any discounts offered in the Letter of Bid, is specified in Section III, Evaluation and Qualification Criteria.

35.5 The Purchaser's evaluation of a Bid will exclude and not take into account:

(a) in the case of Goods manufactured in the Purchaser's Country, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder; and

(b) in the case of Goods manufactured outside the Purchaser's Country, already imported or to be imported, customs duties and other import taxes levied on the imported Good, sales and other similar taxes,

which will be payable on the Goods if the contract is awarded to the Bidder.

35.6 The Purchaser's evaluation of a Bid may require the consideration of other factors, in addition to the Bid Price quoted in accordance with ITB 14. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of Bids, unless otherwise **specified in the BDS** from amongst those set out in Section III, Evaluation and Qualification Criteria. The criteria and methodologies to be used shall be as specified in ITB 35.2(f).

36. Comparison of Bids

36.1 The Purchaser shall compare the evaluated costs of all substantially responsive Bids established in accordance with ITB 35.2 to determine the Bid that has the lowest evaluated cost. The comparison shall be on the basis of CIP (place of final destination) prices for goods to be imported and prices for delivery to final destination for goods already imported less the custom duties and other import taxes already paid or to be paid on such goods (need to be supported with documentary evidence) and EXW prices, plus cost of inland transportation and insurance to place of final destination, for goods manufactured within the Borrower's country, together with prices for any required installation, training, commissioning and other services as per price schedules included in Section IV. The evaluation of prices shall not take into account custom duties and other taxes levied on imported goods (to be imported or already imported) and sales and similar taxes levied in connection with the sale or delivery of goods.

37. Qualification of the Bidder

37.1 The Purchaser shall determine, to its satisfaction, whether the eligible Bidder or Bidders that is/are selected for Items, Lots, Packages and/or their combinations as having submitted the lowest evaluated cost and substantially responsive Bid (s) substantially meet the respective minimum qualifying criteria specified in Section III, Evaluation and Qualification Criteria. To this end, the Purchaser will determine for which Items, Lots and Packages, and their combinations, as the case may be, for which Bidder submitted bid, it substantially meets the respective minimum qualification criteria.

37.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors (other than

specialized subcontractors if permitted in the bidding document), or any other firm(s) different from the Bidder.

37.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the Bid, in which event the Purchaser shall proceed to the Bidder or Bidders who offered the substantially responsive Bid (s) with the next lowest evaluated cost to make a similar determination of that Bidder's qualifications to perform satisfactorily.

37.4 The Purchaser reserves the right to waive minor deviations from the qualification criteria if they do not materially affect the technical capability and financial resources of the Bidder to perform the Contract or combination of Contracts.

38. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids

38.1 The Purchaser reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids at any time prior to Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

39. Standstill Period

39.1 The Contract shall not be awarded earlier than the expiry of the Standstill Period. The Standstill Period shall be ten (10) Business Days unless extended in accordance with ITB 44. The Standstill Period starts the day after the date the Purchaser has transmitted to each Bidder the Notification of Intention to Award the Contract. Where only one Bid is submitted, or if this contract is in response to an emergency situation recognized by the Bank, the Standstill Period shall not apply.

40. Notification of Intention to Award

40.1 The Purchaser shall send to each Bidder the Notification of Intention to Award the Contract to the successful Bidder. The Notification of Intention to Award shall contain, at a minimum, the following information:

(a) the name and address of the Bidder submitting the successful Bid;

(b) the Contract price of the successful Bid;

(c) the names of all Bidders who submitted Bids, and their Bid prices as readout, and as evaluated;

(d) a statement of the reason(s) the Bid (of the unsuccessful Bidder to whom the notification is addressed) was unsuccessful, unless the price information in c) above already reveals the reason;

(e) the expiry date of the Standstill Period;

(f) instructions on how to request a debriefing and/or submit a complaint during the standstill period.

Award of Contract

41. Award Criteria

41.1 Subject to ITB 38 and consistent with determination of successful Bid or Bids as per ITB 35, and unless otherwise **specified in the BDS**:

i) For evaluation based on individual items as per ITB 1.1, 14.6 and 35.2 (a)

The Purchaser shall award the Contract or Contracts to the Selected Bidder or Bidders that have offered bids substantially responsive to the Bidding Document and have been determined successful for one or more items, evaluated bid prices of which shall result in the lowest evaluated cost to the Purchaser for all items combined provided further that the selected Bidder or Bidders substantially meet the required qualifying criteria for item or items for which they are successful.

ii) For evaluation based on Lots or Packages as per ITB 1.1, 14.6 and 35.2 (a)

Same as i) above except replace "item" or "items" wherever appearing with "Lot" and "Lots", or "Package" and Packages" as the case may be.

42. Purchaser's Right to Vary Quantities at Time of Award

42.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section VII, Schedule of Requirements, provided this does not exceed the percentages **specified in the BDS,** and without any change in the unit prices or other terms and conditions of the Bid and the bidding document.

43. Notification of Award

43.1 Prior to the expiration of the Bid Validity Period and upon expiry of the Standstill Period, specified in ITB 39.1 or any extension thereof, and upon satisfactorily addressing any complaint that has been filed within the Standstill Period, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification of award (hereinafter and in the Contract Forms called the "Letter of Acceptance") shall specify the sum that the Purchaser will pay the Supplier in consideration of the execution of the Contract (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").

43.2 Within ten (10) Business Days after the date of transmission of the Letter of Acceptance, the Purchaser shall publish the Contract Award Notice which shall contain, at a minimum, the following information:

(a) name and address of the Purchaser;

(b) name and reference number of the contract being awarded, and the selection method used;

(c) names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated;

(d) names of all Bidders whose Bids were rejected either as nonresponsive or as not meeting qualification criteria, or were not evaluated, with the reasons therefor;

(e) the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope; and

(f) successful Bidder's Beneficial Ownership Disclosure Form, if specified in BDS ITB 45.1.

43.3 The Contract Award Notice shall be published on the Purchaser's website with free access if available, or in at least one newspaper of national circulation in the Purchaser's Country, or in the official gazette. The Purchaser shall also publish the contract award notice on the Bank's website and in UNDB online.

43.4 Until a formal Contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

44. Debriefing by the Purchaser

44.1 On receipt of the Purchaser's Notification of Intention to Award referred to in ITB 40.1, an unsuccessful Bidder has three (3) Business Days to make a written request to the Purchaser for a debriefing. The Purchaser shall provide a debriefing to all unsuccessful Bidders whose request is received within this deadline.

44.2 Where a request for debriefing is received within the deadline, the Purchaser shall provide a debriefing within five (5) Business Days, unless the Purchaser decides, for justifiable reasons, to provide the debriefing outside this timeframe. In that case, the standstill period shall automatically be extended until five (5) Business Days after such debriefing is provided. If more than one debriefing is so delayed, the standstill period shall not end earlier than five (5) Business Days after the last debriefing takes place. The Purchaser shall promptly inform, by the quickest means available, all Bidders of the extended standstill period

44.3 Where a request for debriefing is received by the Purchaser later than the three (3)-Business Day deadline, the Purchaser should provide the debriefing as soon as practicable, and normally no later than fifteen (15)

Business Days from the date of publication of Public Notice of Award of contract. Requests for debriefing received outside the three (3)-day deadline shall not lead to extension of the standstill period.

44.4 Debriefings of unsuccessful Bidders may be done in writing or verbally. The Bidders shall bear their own costs of attending such a debriefing meeting.

45. Signing of Contract

45.1 The Purchaser shall send to the successful Bidder the Letter of Acceptance including the Contract Agreement, and, if **specified in the BDS**, a request to submit the Beneficial Ownership Disclosure Form providing additional information on its beneficial ownership. The Beneficial Ownership Disclosure Form, if so requested, shall be submitted within eight (8) Business Days of receiving this request.

45.2 The successful Bidder shall sign, date and return to the Purchaser, the Contract Agreement within twenty-eight (28) days of its receipt.

45.3 Notwithstanding ITB 45.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, where such export restrictions arise from trade regulations from a country supplying those products/goods, systems or services, the Bidder shall not be bound by its Bid, always provided however, that the Bidder can demonstrate to the satisfaction of the Purchaser and of the Bank that signing of the Contact Agreement has not been prevented by any lack of diligence on the part of the Bidder in completing any formalities, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract.

46. Performance Security

46.1 Within twenty-eight (28) days of the receipt of Letter of Acceptance from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC 18, using for that purpose the Performance Security Form included in Section X, Contract Forms, or another Form acceptable to the Purchaser. If the Performance Security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Purchaser. A foreign institution providing a bond shall have a correspondent financial institution located in the Purchaser's Country, unless the Purchaser has agreed in writing that a correspondent financial institution is not required.

46.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

In that event the Purchaser may award the Contract to the Bidder or Bidders offering the next Lowest Evaluated Cost to the Purchaser as per the bid Evaluation and award criteria.

47. Procurement Related Complaint

47.1 The procedures for making a Procurement-related Complaint are as **specified in the BDS**.

Section II - Bid Data Sheet (BDS)

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in the ITB.

ITB Reference	A. General
ITB 1.1	The reference number of the Invitation for Bids (IFB) is: **OCBI/TVETE PHASE III/EQUIP/48/24-25** The Purchaser is: **Ministry of Education, State department for Vocational and Technical Training** The name of the IFB is: **Open Competitive Bidding (International) (OCBI) Tender for Supply, Installation, Calibration, Commissioning and Training on the use and Maintenance of Mechanical and Automotive Engineering Training Equipment** The number and identification of lots comprising this IFB is: **OCBI/TVETE PHASE III/EQUIP/48/24-25-** **Lot 2 - Tender for Supply, Installation, Calibration, Commissioning and Training On the Use and Maintenance of Mechanical Engineering Equipment to Mukurwe-ini Technical Training Institute– Nyeri County and Automotive Engineering Equipment to Aldai Technical Training Institute – Nandi County**
ITB 2.1	The Borrower is: **The Government of Kenya, Ministry of Education, State department for Vocational and Technical Training** Loan or Financing Agreement amount: **USD 43.14 Million** The Specific Bank financing institution is: **ADF** The name of the Project is: **Support to Technical and Vocational Education and Training and Entrepreneurship (TVETE) – (GOK/AfDB TVET PHASE III Project**
ITB 4.1 (a)	i) The firms in a Joint Venture, Consortium or Association (JV) **shall be** jointly and severally liable.

ITB 4.5	A list of debarred firms and individuals is available on the Bank's external website: https://www.afdb.org/en/projects-operations/ debarment-and-sanctions-procedures
	B. Contents of Bidding Document
ITB 7.1	For **Clarification of Bid purposes** only, the Purchaser's address is: **The Project Coordinator** **Support to Technical and Vocational Education and Training and Entrepreneurship (TVETE) Project (GOK/AfDB TVET PHASE III Project)** **Teleposta Towers, Kenyatta Avenue Road** **Wing C, 24th Floor Room 2412, P.O Box 9583-00200** **Telephone: +254 020 318581** **Tel/Fax: 254 020 2251991** **procurement.afdb@education.go.ke** Requests for clarification should be received by the Purchaser no later than: **10 days prior to the deadline for submission of bids**
	C. Preparation of Bids
ITB 10.1	The language of the Bid is: **English** All correspondence exchange shall be in **English** language.
ITB 11.1 (m)	The Bidder shall submit the following additional documents in its Bid: **(1) Power of Attorney** **(2) Valid Registration certificates of the firm or firms in case of joint venture** **(3) Original Bid Security of Kenya Shillings Four Million (KES 4,000, 000) or its equivalent in any freely convertible currency from a reputable bank in Kenya or Foreign Bank Confirmed by Kenyan Bank valid for 28 days beyond the Tender Validity period.** **(4) Dully filled and signed letter of bid**

	(5) Joint Venture consortium/association be properly signed where necessary **(6) Valid Tax Compliance Certificates or equivalent for international firms** **(7) Manufacturer's Authorization (s)** **(8) Brochures and catalogues for each item specifications** **(9) Guarantee of availability of spares and after sale services** **(10) Bid validity period of at least 120 days** **(11) Submit the required number of copies i.e. one (1) original and two (2) copies** **(12) Statement of compliance to specifications for each item** **(13) Comprehensive training plan on use and maintenance of the equipment**
ITB 13.1	Alternative Bids **shall not be** considered.
ITB 14.5	The prices quoted by the Bidder **shall not** be subject to adjustment during the performance of the Contract.
ITB 14.6	Bids are invited for Lots: **Bidders should bid for the whole lot**. Bids shall be evaluated, and contract(s) awarded per lot.
ITB 14.6	Bids are invited lot-wise, and the following shall apply: i) Prices shall be quoted for each lot and shall correspond at least **to *100%*** percent of the items specified ii) Prices quoted for each item shall correspond at least to ***100%*** percent of the quantities specified for the respective item of a lot. iii) Prices shall be quoted for each lot and shall correspond to at least ***100%*** *percent of the lot. Each lot shall comply with stipulations in (i) and (ii) above with respect to minimum percent of items and minimum percent of quantities.*
ITB 14.8	The Incoterms edition is: **Incoterms 2010 published by the International Chamber of commerce**

ITB 14.9 (b)(i)	Place of destination: **CIP** **MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE – NYERI COUNTY** **AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE – NANDI COUNTY**
ITB 14.9 (a)(iii), (b)(ii) and (c)(v)	Final Destination (Project Site): **CIP** **MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE – NYERI COUNTY** **AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE – NANDI COUNTY**
ITB 15.1	The Bidder ***is not*** required to quote in the currency of the Purchaser's Country the portion of the Bid price that corresponds to expenditures incurred in that currency.
ITB 16.4	Period of time the Goods are expected to be functioning (for the purpose of spare parts): **Two (2) Years**
ITB 17.2 (a)	Manufacturer's authorization is: **Required**
ITB 17.2 (b)	Representation by an Agent for after sales service is: **Required**
ITB 18.1	The Bid validity period shall be 120 days.
ITB 19.1	A Bid Security amount **shall be** required. A Bid-Securing Declaration **shall not be** required. This must be accompanied by a bid security of **2% of the bid amount in Kenya Shillings or its equivalent in any freely convertible currency**. The bid security shall **be in the form of a bank guarantee** and must be from a reputable commercial bank supervised by the Central bank of Kenya.
ITB 19.3 (d)	Other types of acceptable securities: **None**

ITB 20.1	In addition to the original of the Bid, the number of copies is**: Two (2) Copies**
ITB 20.3	The written confirmation of authorization to sign on behalf of the Bidder shall consist of**: Power of Attorney** **(a) The name and description of the documentation required to demonstrate the authority of the signatory to sign the Bid such as a Power of Attorney; and** **(b) In the case of Bids submitted by an existing or intended JVCA an undertaking signed by all parties (i) stating that all parties shall be jointly and severally liable, if so required in accordance with ITB 4.1(a), and (ii) nominating a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JVCA during the bidding process and, in the event the JVCA is awarded the Contract, during contract execution."]**
	D. Submission and Opening of Bids
ITB 22.1	For **Bid submission purposes** only, the Purchaser's address is: **Ministry of Education- State Department for Technical, Vocational Education and Training** **Directorate of Vocational, Technical Education** **Teleposta Towers, Kenyatta Avenue,** **24th Floor, Room 2412** **P.O. Box 9583 – 00200 Nairobi** **Telephone: +254 020 318581** **Tel/Fax: 254 020 2251991** **NAIROBI, KENYA** **procurement.afdb@education.go.ke** **The deadline for Bid submission is:** Date: **7th August 2025** Time: **10.00 am Local Time** Bidders **shall not** have the option of submitting their Bids electronically.
ITB 25.1	The Bid opening shall take place at:

	Ministry of Education- State Department for Technical, Vocational Education and Training **Directorate of Vocational, Technical Education** **Teleposta Towers, Kenyatta Avenue,** **24th Floor, Room 2412** **P.O. Box 9583 – 00200 Nairobi** **Telephone: +254 020 318581** **Tel/Fax: 254 020 2251991** **NAIROBI, KENYA** **Date: 7th August 2025** **Time: 10.00 am Local Time**
ITB 25.6	The Letter of Bid and Price Schedules of the original bid shall be initialed by **at least Three (3)** representatives of the Purchaser conducting Bid opening.
	E. Evaluation and Comparison of Bids
ITB 31.3	The adjustments with respect to a missing or non-conforming item or component, and costs associated, if any, with non-material deviations, reservations or omissions to the requirements of the bidding document shall be based on the **highest** price of the item or component and cost, if any, of non-material deviations, reservations or omissions as quoted in or derived from other substantially responsive Bids unless any other specific evaluation criteria has been provided elsewhere in the bidding document for such adjustments in which case the latter shall be applied. If the price or cost of any of the above cannot be derived from the price or cost of other substantially responsive Bids, the Purchaser shall use its best estimate based on its own judgment, past experience or market search, as considered appropriate.
ITB 33.1	The currency that shall be used for Bid evaluation and comparison purposes to convert at the selling exchange rate all Bid prices expressed in various currencies into a single currency is: **KENYA SHILLING** The source of exchange rate shall be: **THE CENTRAL BANK OF KENYA** The date for the exchange rate shall be: **The deadline for submission of bids**

ITB 34.1	A margin of domestic preference **shall not** apply. A margin of regional preference **shall not** apply
ITB 35.2(a)	Evaluation shall be done for the lot consistent with ITB 1.1 and ITB14.6] Note: ***Bids will be evaluated, and Contracts awarded for the whole lot, taking into account all unconditional discounts, if any. Contracts will be awarded to the Bidder offering the lowest evaluated cost to the Purchaser for the whole lot*** ***If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. An item not listed in the Price Schedule shall be assumed to be not included in the Bid, and provided that the Bid is substantially responsive, the highest price of the item quoted by substantially responsive Bidders will be added to the Bid price and the equivalent total cost of the Bid so determined will be used for price comparison.]***
ITB 35.6	The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria: ***[refer to Section III, Evaluation and Qualification Criteria; insert complementary details if necessary]*** **(a)** Deviation in Delivery schedule: ***NO*** **(b)** Deviation in payment schedule: ***NO*** **(c)** The cost of major replacement components, mandatory spare parts, and service: ***NO*** **(d)** The availability in the Purchaser's Country of spare parts and after-sales services for the equipment offered in the Bid: **NO** **(e)** Life cycle costs: the costs during the life of the goods or equipment ***NO*** **(f)** The performance and productivity of the equipment offered; ***NO***
F. Award of Contract	

ITB 42	The maximum percentage by which quantities may be increased is: ***15%*** The maximum percentage by which quantities may be decreased is: ***15%***
ITB 45. 1	The successful Bidder ***shall*** submit the Beneficial Ownership Disclosure Form.
ITB 47.1	The procedures for making a Procurement-related Complaint are detailed in the **Part B** of the Operations Procurement Manual under the Procurement Framework of the African Development Bank. If a Bidder wishes to make a Procurement-related Complaint, the Bidder shall submit its complaint following these procedures to the Purchaser, in writing (by the quickest means available, such as by email in accordance with the following: **Attention: The Project Coordinator** **Support to Technical and Vocational Education and Training and Entrepreneurship (TVETE) Project – (GOK/AfDB TVET PHASE III PROJECT)** **Teleposta Towers, Kenyatta Avenue Road** **Wing C, 24th Floor Room 2409, P.O Box 9583-00200** **NAIROBI- KENYA** **Electronic mail address: procurement.afdb@education.go.ke** In summary, a Procurement-related Complaint may challenge any of the following: 1. the terms of the Bidding Documents; 2. the purchaser's decision to exclude a bidder from the procurement process prior to the award of contract; and 3. the Purchaser's decision to award the contract. The Bank's Procurement Framework stipulates that bidders may send copies of their communications with the Borrowers to the Bank or write to the Bank directly when, Borrowers do not respond promptly, any questions on any issues regarding the implementation of Bank funded projects, or when the communication is a complaint against the Borrower. In this regard, if a bidder wishes to protest against a decision made by a Borrower or the Bank with regards to the procurement process or wishes to inform the Bank that the Bank's procurement rules and/or provisions of the bidding documents

	have not been complied with, an email can be sent to the following address: **Email:** procurementcomplaints@afdb.org

Section III - Evaluation and Qualification Criteria

This Section contains the criteria that the Purchaser shall use to evaluate a Bid and qualify the Bidders. No other factors, methods or criteria shall be used other than specified in this bidding document. Wherever a Bidder is required to state a monetary amount, Bidders should indicate the USD equivalent using the rate of exchange determined as follows:

- For annual turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.

- Value of single contract - Exchange rate prevailing on the date of the contract.

Exchange rates shall be taken from the publicly available source identified in the ITB 33.1. Any error in determining the exchange rates in the Bid may be corrected by the Purchaser.

Contents

I. Margin of Preference (ITB 34) – Not Applicable

II. Successful Bid or Bids

The Purchaser shall apply the criteria and methodologies listed in this Section to evaluate Bids and determine the successful Bid or Bids which has/have been determined to:

(a) be substantially responsive to the bidding document;

(b) offer the lowest evaluated total cost to the Purchaser for all items to be procured based on either a single Contract or all multiple Contracts combined, as the case may be, in accordance with the ITB 14.6 inviting bid prices and discounts, and provisions made in the Bidding Document for evaluation of bids and award of contract (s); and

(c) be offered by Bidder or Bidders that substantially meet the qualification criteria applicable for Contract or Contracts for which they are selected.

1. Evaluation: Technical Bid and Commercial Conditions (ITB 30.3 and ITB 30.4)

1.1 Evaluation of Technical Bid (Reference ITB 16 and ITB 30.3): The Purchaser shall evaluate the Technical Bid to determine compliance with the Purchaser's requirements under Section VII 'Schedule of Requirement' and whether the Bids are substantially responsive to the Technical Specifications and other Requirements.

1.2 Evaluation of Commercial Terms and Conditions of the Bid (Reference ITB 30.4): The Purchaser shall determine whether the Bids are substantially responsive to the Commercial and Contractual Terms and Conditions. **[Bidder shall provide form titled "Commercial Terms and Conditions" as per Section IV]**

2. Evaluation (ITB 35.6)

2.1. Evaluation Criteria (Other Factors) (ITB 35.6)

The Purchaser's evaluation of a Bid may take into account, in addition to the Bid Price quoted in accordance with ITB 14.9, one or more of the following factors as specified in ITB 35.2(f) and in BDS referring to ITB 35.6, using the following criteria and methodologies.

(a) Delivery schedule. (As per Incoterms **specified in the BDS**)

The Goods specified in the List of Goods are required to be delivered within the acceptable time range (after the earliest and

before the final date, both s inclusive) specified in Section VII, Schedule of Requirements. No credit will be given to deliveries before the earliest date, and Bids offering delivery after the final date shall be treated as non-responsive. Within this acceptable period, an adjustment of ***0.5% per week of delay,*** *will be added, for evaluation purposes only, to the Bid price of Bids offering deliveries later than the "Earliest Delivery Date" specified in Section VII, Schedule of Requirements.*

(b) Deviation in payment schedule. *[insert one of the following]*

(i) *Bidders shall state their Bid price for the payment schedule outlined in the Special Conditions of Contract (SCC). Bids shall be evaluated on the basis of this base price.*

(c) Cost of major replacement components, mandatory spare parts, and service.

(i) *Bidder shall provide along with its Bid, the list of recommended spare parts for Goods offered indicating for each item of spare part the recommended quantity and unit, and total CIP final destination prices required during the initial period of operation* ***specified in the BDS*** *16.4. The cost of such spare parts will be taken into account for bid evaluation. The Bidder, if successful, undertakes to supply free of cost to the Purchaser any item and quantity not included in the above list which as per Purchaser's determination would be required during the above period of operation specified*

(d) Life Cycle Costs (LCC) **– Not Applicable**

(f) Performance and productivity of the equipment: ***– Not Applicable***

(g) Specific additional criteria **– Not Applicable**

2.2. Evaluation of Multiple Contracts (ITB 35.4)

a) Determination of substantial responsiveness of Bids and Qualifications of Bidders shall strictly follow the criteria and procedures described in Sections F, and G, of the ITB, Bid data Sheet and this Section III, 'Evaluation and Qualification Criteria'.

b) Bids invited based on an item-wise approach, lot or package-wise shall be evaluated and the relevant contract shall be awarded based on each item, each lot or each package, as applicable. Contract(s) shall be awarded to the bidder or bidders offering substantially responsive

Bid(s) and the lowest evaluated cost to the Purchaser for combined Items, lots, or packages, as the case may be, after considering all possible combinations, and discounts offered subject to the selected bidder(s) substantially meeting the required Qualification Criteria for which they are selected (Ref: Section III, Qualification Requirements, including ITB 33, ITB 35 to ITB 40 and ITB 44). For each of the above approaches, a contract may contain more than one item, lot, or package, if a Bidder is determined successful accordingly.

c) For each of the above approaches the determination of the lowest cost to the Purchaser will be based on the following:

(i) Each and every item quoted in a bid for any approach of bidding and award of contract (Item, or lot or package-wise). shall be classified in one of the three Groups, namely, A, B and C as quoted in the bid;

(ii) The lowest evaluated cost of an item shall be determined by application of all criteria specified under sections, ITB, BDS and Section III as mentioned above in para (a) taking into account discounts offered for combined items (provided the Bidder (s) selected substantially meet the qualification criteria for combined items), and application of margin of domestic preference, if applicable. If an item in a bid qualifies for a margin of domestic preference, the evaluated price of such item in Group C will account for the applicable margin of preference over the CIP price for comparison with other bids in Group A; and

(iii) The lowest evaluated cost of a lot or a package as the case may be will be the sum of the evaluated cost of all Individual items in the lot or package, as applicable, determined as per para (c) (ii) above, taking into account discounts offered for combined lots or package, as applicable (provided that the Bidder (s) selected substantially meet the qualification criteria for combined lots or packages, as applicable).

2.3. Alternative Bids (ITB 13.1) – Not Applicable

3. Qualification of Bidders (ITB 37)

[N.B. This SBD for Procurement of Goods assumes that no Prequalification has taken place before bidding. However, if a Prequalification process is undertaken, the Qualification Criteria stipulated in this Section III, Evaluation and Qualification Criteria must be updated to ensure that the Bidder and any Subcontractors shall meet or continue to meet the Criteria used at the time of Prequalification.]

3.1 Qualification Criteria (ITB 37.1)

After determining the substantially responsive Bid which offers the lowest-evaluated cost in accordance with ITB 35, the Purchaser shall carry out the post-qualification of the Bidder in accordance with ITB 37, using only the requirements specified. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications. The minimum qualification requirements for multiple contracts will be the sum of the minimum requirements for respective individual contracts, unless otherwise specified.

(I) If the Bidder is a manufacturer:

(i) Financial Capability:

The Bidder shall furnish documentary evidence that it meets the following financial requirement(s):

*(a): (i) The audited balance sheets or, if not required by the laws of the Bidder's country, other financial or Bank statements acceptable to the Purchaser, for the last **Three [3] years**, namely years **2012, 2023 and 2024** shall be submitted demonstrating the current soundness of the Bidder's financial position and availability of adequate financial resources to perform the contract. In case of JV, each member of the JV shall furnish its own financial statement as required above. Refer to Form FIN – 3.1 to provide the required information.]*

*(b): (iii) For Bid evaluation to be performed package-wise as per ITB 1.1, ITB 14.6, 14.7 and ITB 35.2 (a): The Bidder shall demonstrate the minimum average annual financial turnover of **3 times the total bid price of all items for which bid has been submitted** as certified payments received by the Bidder since **January 1, 2022 to December 31, 2024** for contracts in progress and completed for all Goods manufactured and supplied divided by **Three (3)** number of years and part thereof elapsed since **January 1, 2022 to December 31, 2024**. If the average annual turnover amount is less than the required turnover amount for all packages for which the Bidder is successful, limitation will be placed on the number of item(s) that will be awarded to the Bidder and Purchaser will decide which item or items will be awarded based on the most economical combination that will result in the lowest evaluated cost to the Purchaser for all packages. In case the Bidder is a JV, average annual turnover of all members to the JV shall be added to determine the turnover of the Bidder. Refer to Form FIN—3.2 to provide the required information.]*

(ii) Experience and Technical Capacity

The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement(s). In case the Bidder is a JV, experience and demonstrated technical capacity of only the JV shall be taken into account and not of individual members nor their individual experience/capacity will be aggregated. Wherever the words "Similar Goods" have been used it includes upgrades, latest and improved versions or models of similar specifications and technology. Refer to Form Exp-1 to provide the required information.

(a) The Bidder shall be manufacturing similar Goods since ***January 1, 2022 to December 31, 2024***

(b) The Bidder shall furnish documentary evidence to demonstrate successful completion of at least Three (3) contracts of similar Goods since ***January 1, 2022 to December 31, 2024*** *involving* ***total*** *supply of at least 70% of required quantity of each package*

(iii) Documentary Evidence of Usage of Goods (When appropriate)

The Bidder shall furnish documentary evidence to demonstrate that the Goods it offers meet the following usage requirement:

The Bidder shall furnish documentary evidence satisfactory to the Purchaser to demonstrate that similar Goods as offered in the Bid have been in successful use or operation since ***January 1, 2022 to December 31, 2024****. If the Bidder is a JV, the evidence of demonstrated usage of Goods supplied in the past shall be in the name of the JV.]* Refer to Form Exp-1 to provide the required information.

(II) If the Bidder is not a manufacturer:

If a Bidder is not a manufacturer, but is offering the Goods on behalf of the Manufacturer under Manufacturer's Authorization Form (Section IV, Bidding Forms), the bidder shall demonstrate the qualifications shown below . *If the Bidder is a JV, past performance contracts shall be in the name of the JV*. Refer to Form Exp-1 to provide the required information.

(i) Financial Capability:

The Bidder shall furnish documentary evidence that it meets the following financial requirement(s):

(a): (i) The audited balance sheets or, if not required by the laws of the Bidder's country, other financial or Bank statements acceptable to the Purchaser, for the last ***Three [3] years****, namely years* ***2022, 2023 and 2024*** *shall be submitted demonstrating the current soundness of the Bidder's financial position and availability of adequate financial resources to perform the contract. In case of JV, each member of the JV shall furnish its own financial statement as required above. Refer to Form FIN – 3.1 to provide the required information.]*

(b): (iii) For Bid evaluation to be performed package-wise as per ITB 1.1, ITB 14.6, 14.7 and ITB 35.2 (a): The Bidder shall demonstrate the minimum average annual financial turnover of ***3 times the total bid price of all items for which bid has been submitted*** *as certified payments received by the Bidder since* ***January 1, 2022 to December 31, 2024*** *for contracts in progress and completed for all Goods manufactured and supplied divided by* ***Three (3)*** *number of years and part thereof elapsed since* ***January 1, 2022 to December 31, 2024****. If the average annual turnover amount is less than the required turnover amount for all packages for which the Bidder is successful, limitation will be placed on the number of item(s) that will be awarded to the Bidder and Purchaser will decide which item or items will be awarded based on the most economical combination that will result in the lowest evaluated cost to the Purchaser for all packages. In case the Bidder is a JV, average annual turnover of all members to the JV shall be added to determine the turnover of the Bidder. Refer to Form FIN—3.2 to provide the required information.]*

(ii) Experience and Technical Capacity

The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement(s). In case the Bidder is a JV, experience and demonstrated technical capacity of only the JV shall be taken into account and not of individual members nor their individual experience/capacity will be aggregated. Wherever the words "Similar Goods" have been used it includes upgrades, latest and improved versions or models of similar specifications and technology. Refer to Form Exp-1 to provide the required information.

(a) The Bidder shall be supplying similar Goods since ***January 1, 2022 to December 31, 2024***

(b) The Bidder shall furnish documentary evidence to demonstrate successful completion of at least Three (3)

*contracts of similar Goods since **January 1, 2022 to December 31, 2024** involving **total** supply of at least 70% of required quantity of each package*

(iii) Documentary Evidence of Usage of Goods

The Bidder shall furnish documentary evidence to demonstrate that the Goods it offers meet the following usage requirement:

*The Bidder shall furnish documentary evidence satisfactory to the Purchaser to demonstrate that similar Goods as offered in the Bid have been in successful use or operation since **January 1, 2022 to December 31, 2024.** If the Bidder is a JV, the evidence of demonstrated usage of Goods supplied in the past shall be in the name of the JV.]* Refer to Form Exp-1 to provide the required information.

(III) History of non-performing contracts:

Bidder including manufacturer, if the Bidder is not a manufacturer, and each members of JV in case the Bidder is a JV, shall demonstrate that Non-performance of a contract did not occur as a result of the default of the Bidder, manufacturer or the member of JV as the case may be, since **1st January 2022**. The required information shall be furnished as per form CON-2.

(IV) Pending Litigation:

Financial position and prospective long-term profitability of the Single Bidder, and in the case the Bidder is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under paragraph I (i) above assuming that all pending litigation will be resolved against the Bidder. Bidder shall provide information on pending litigations as per Form CON-2.

(V) Litigation History:

There shall be no consistent history of court/arbitral award decisions against the Bidder[1] since **1st January 2022** All parties to the contract shall furnish the information as per Form CON-2.

[1] The Bidder shall provide accurate information on the related Form (CON-2) about any litigation or arbitration resulting from contracts completed or ongoing under its execution since Jan. 1 2017). A consistent history of awards against the Bidder or any member of a JV may result in rejection of the bid.

Section IV - Bidding Forms

Table of Forms

Letter of Bid

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

The Bidder must prepare this Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.

Date of this Bid submission: *[insert date (as day, month and year) of Bid submission]*
OCBI / LCB No.: [*insert number of bidding process as per procurement plan*]
Invitation for Bid No.: [*insert same IFB No. as advertised*]
Alternative No.: [*insert identification No if this is a Bid for an alternative*]

To: **[*insert complete name of Purchaser*]**

(a) **No reservations:** We have examined and have no reservations to the bidding document, including Addenda issued in accordance with Instructions to Bidders (ITB 8);

(b) **Eligibility-of Bidder**: We including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries and meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;

(c) **Eligibility of Goods and Related Services:** We meet the eligibility requirements for Goods and Related Services in accordance with ITB 5;

(d) **Bid-Securing Declaration**: We have not been suspended nor declared ineligible by the Purchaser based on execution of a Bid-Securing Declaration in the Purchaser's Country in accordance with ITB 4.7;

(e) **Conformity:** We offer to supply in conformity with the bidding document and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods: [*insert a brief description of the Goods and Related Services*];

(f) **Bid Price**: The total price of our Bid, excluding any discounts offered in paragraph (g) below is:

Option 1: Procurement of one or several Items--Item-wise:

(a) Total bid price of each item in words and figures, indicating item number and total amounts of respective currencies in which bid prices for that item have been submitted and payment requested;

(b) Grand Total Bid Price of all Bid items in respective currencies. Use the following format.

Item No.	Total Price of each item in quoted currency (ies) in words and figure
1; 2; etc.	

Grand Total Bid Price of all Bid Items: Currency A-----; Currency B-------, etc.in words and figures

Or

Option 2: Procurement of items in one or several Lots---Lot-wise- each lot containing one or more items:

(a) Total bid price of each lot in words and figures, indicating lot number and total amounts of respective currencies in which bid prices for that lot have been submitted and payment requested:

(b) Grand Total Bid Price of all Bid lots in respective currencies. Use the following format.

Lot No.	Total Price of each lot in quoted currency (ies) in words and figure
1; 2; etc.	

Grand Total Bid Price of all Bid lots: Currency A-----; Currency B--------, etc. in words and figures

Or

Option 3: Procurement of items in one or several Packages—each package containing one more lots:

(a) Total bid price of each lot of the package and total bid price of each package in words and figures, indicating lot numbers

and corresponding package number and total amounts of respective currencies in which bid prices for each package have been submitted and payment requested:

(b) Grand Total Bid Price of all Bid packages in respective currencies. Use the following format.

Package No	Lot No	Total Price of each lot in quoted currency(ies) in words and figures
1	Lot 1	
	Lot 2, etc.	
Total Price of Package 1=Total Price of Lots 1, 2, etc.=		
Package No	Lot No	Total Price of each lot in quoted currency(ies) in words and figures
2	1	
	Lot 2, etc.	
Total Price of Package 2=Total Price of Lots 1, 2, etc.=		

Grand Total Bid Price of all Bid packages: Currency A-----; Currency B-------etc.-in words and figures.

(g) **Discounts**: The discounts offered and the methodology for their application are:

(i) The discounts offered are: [*Specify in detail each discount offered.*]

(ii) The exact method of calculations to determine the net price of each item, and in case of multiple lots or multiple packages, net price of each item, each lot and each package as applicable, after application of discounts is shown below: [*Specify in detail the method*

that shall be used to apply the discounts and ensure clarity, unambiguity, etc. in accordance with ITB 14.7];

(h) **Bid Validity Period**: Our Bid shall be valid for the period specified in BDS 18.1 (as amended, if applicable) from the date fixed for the Bid submission deadline specified in BDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(i) **Performance Security**: If our Bid is accepted, we commit to obtain a performance security in accordance with the bidding document;

(j) **One Bid per Bidder**: We are not submitting any other Bid(s) as an individual Bidder, and we are not participating in any other Bid(s) as a Joint Venture member, or as a subcontractor, and meet the requirements of ITB 4.3, other than alternative Bids submitted in accordance with ITB 13;

(k) **Suspension and Debarment**: We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Bank or a debarment imposed by the Bank in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the Bank and other development banks. Further, we are not ineligible under the Purchaser's Country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(l) **State-owned enterprise or institution**: [*select the appropriate option and delete the other*] [*We are not a state-owned enterprise or institution*] / [*We are a state-owned enterprise or institution but meet the requirements of ITB 4.6*];

(m) **Commissions, gratuities, fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the Bidding process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity];*

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

(n) **Binding Contract**: We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;

(o) **Purchaser Not Bound to Accept**: We understand that you are not bound to accept the lowest evaluated cost Bid, or any other Bid that you may receive; and

(p) **Fraud and Corruption**: We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption.

Name of the Bidder: **[insert complete name of the Bidder]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder: ***[insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed [*insert date of signing]* **day of** *[insert month], [insert year]*

***** In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture (JV) as Bidder or names of all members (partners) of JV and sign on behalf of the JV and not on behalf of only one member that has been given power of attorney.

** Person signing the Bid shall have the power of attorney given by the Bidder. If the Bidder is a JV the power of attorney shall be given by the JV or by all members of the JV. The power of attorney shall be attached with the Bid Schedules.

Price Schedule Forms

*[The Bidder shall fill in these Price Schedule Forms for the Base-Bid in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules** shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements. For Alternative Bid, if permitted, use same set of Price Schedules by identifying and differentiating them as Alternative Price Schedule from the Base-Bid]*

Price Schedule: Goods Manufactured Outside the Purchaser's Country, to be Imported Mechanical Engineering Equipment for Mukurwe-ini Technical Training Institute

				(Group C Bids, goods to be imported) Currencies in accordance with ITB 15			Date: _____ OCBI / LCB No: _____ Alternative No: _____ Page N° _____ of _____	
1	2	3	4	5	6	7	8	9
Line Item N°	Description of Goods	Country of Origin	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price CIP FINAL DESTINATION **Mukurwe-ini Technical Training Institute**	CIP Price per line item (Col. 5x6)	Price per line item for inland transportation and other services required in the Purchaser's Country to convey the Goods to their final destination as specified in BDS in accordance with ITB 14.9 (b) (ii) [This column is not applicable if destination as per column 6 under ITB 14.9 (b) (i) and final destination as per ITB 14.9 (b) (ii) is the same]	Total Price per Line item (Col. 7+8)
MEE 1	CNC lathe machine		18 Months from date of contract signing	1pc				

MEE 2	CNC Milling Machine		18 Months from date of contract signing	1pc				
MEE 3	Universal Milling Machine		18 Months from date of contract signing	1pc				
MEE 4	Lathe Machine		18 Months from date of contract signing	1pc				
MEE 5	Radial Drilling Machine		18 Months from date of contract signing	1pc				
MEE 6	Power Saws, Band, Horizontal		18 Months from date of contract signing	1pc				
MEE 7	Welding Training Set		18 Months from date of contract signing	1pc				
MEE 8	Spot Welding Machine		18 Months from date of contract signing	1pc				
MEE 9	MIG welding machine 250 amp		18 Months from date of contract signing	1pc				

MEE 10	TIG welding machine 250 amp		18 Months from date of contract signing	1pc				
MEE 11	Gas metal arcwelding (GMAW), /metal inert gas (MIG) welding / metal active gas (MAG) welding		18 Months from date of contract signing	1pc				
MEE 12	Universal Testing Machine		18 Months from date of contract signing	1pc				
MEE 13	Torsion Testing Machine		18 Months from date of contract signing	1pc				
MEE 14	Ultrasonic Flaw Detector		18 Months from date of contract signing	1pc				
MEE 15	Auto Collimator		18 Months from date of contract signing	1pc				

MEE 16	Universal Profile Projector		18 Months from date of contract signing	1pc				
MEE 17	Angle Dekker		18 Months from date of contract signing	1pc				
MEE 18	Desk Top Computers		18 Months from date of contract signing	1pc				
MEE 19	Auto-CAD and Anti-virus software		18 Months from date of contract signing	1pc				
MEE 20	Plotters		18 Months from date of contract signing	1pc				
MEE 21	Printers Heavy Duty		18 Months from date of contract signing	1pc				
MEE 22	Light Crystal Display (LCD)/ Projector		18 Months from date of contract signing	1pc				
MEE 23	Software for all computers		18 Months from date of contract signing	1pc				

MEE 24	Work Done by a Variable Force Apparatus		18 Months from date of contract signing	1pc				
MEE 25	Gear Trains Apparatus		18 Months from date of contract signing	1pc				
MEE 26	Crank and Connection Rod		18 Months from date of contract signing	1pc				
MEE 27	Toggle with Single and Double Action		18 Months from date of contract signing	1pc				
MEE 28	Cam and Follower Apparatus		18 Months from date of contract signing	1pc				
MEE 29	Flywheel Apparatus		18 Months from date of contract signing	1pc				
MEE 30	Wall Mounted Screw Jack		18 Months from date of contract signing	1pc				
MEE 31	Mechanics / Machine Friction of Belts Apparatus		18 Months from date of contract signing	1pc				

MEE 32	Rope-Belt Friction Apparatus		18 Months from date of contract signing	1pc				
MEE 33	Viscosity Measurement Apparatus		18 Months from date of contract signing	1pc				
MEE 34	Condition Monitoring Equipment		18 Months from date of contract signing	1pc				
MEE 35	Set of MEASURING TOOLS		18 Months from date of contract signing	1pc				
MEE 36	Vernier Caliper		18 Months from date of contract signing	12pcs				
MEE 37	Vernier HT. Gauge		18 Months from date of contract signing	12pcs				
MEE 38	Measuring Tools Set		18 Months from date of contract signing	1pc				
MEE 39	Misc. Hand Tools		18 Months from date of contract signing	1pc				

MEE 40	Anvil With Stand		18 Months from date of contract signing	6pcs				
MEE 41	Figure Stamp Set		18 Months from date of contract signing	12pcs				
MEE 42	Bench Vice		18 Months from date of contract signing	12pcs				
MEE 43	Pipe Wrench		18 Months from date of contract signing	12pcs				
MEE 44	Open Ended Wrench Set		18 Months from date of contract signing	12pcs				
MEE 45	Vice Grip Pliers		18 Months from date of contract signing	12pcs				
MEE 46	Screwdrivers		18 Months from date of contract signing	12pcs				
MEE 47	Hacksaw		18 Months from date of contract signing	12pcs				

MEE 48	Tool Box		18 Months from date of contract signing	6pcs				
MEE 49	Blow Lamp		18 Months from date of contract signing	12pcs				
MEE 50	Soldering Iron		18 Months from date of contract signing	12pcs				
MEE 51	Punch &Chisel Set		18 Months from date of contract signing	12pcs				
MEE 52	Tap& Die Set, Metric Small		18 Months from date of contract signing	12pcs				
MEE 53	Tap& Die Set, Metric Large		18 Months from date of contract signing	12pcs				
MEE 54	Tap& Die Set, Bsw		18 Months from date of contract signing	12pcs				
MEE 55	Wing Divider		18 Months from date of contract signing	12pcs				

MEE 56	Protractor		18 Months from date of contract signing	12pcs				
MEE 57	Universal Surface Gauge		18 Months from date of contract signing	12pcs				
MEE 58	Plumb & Spirit Level		18 Months from date of contract signing	12pcs				
MEE 59	Riveting tools		18 Months from date of contract signing	12pcs				
MEE 60	Screw starter Set		18 Months from date of contract signing	12pcs				
MEE 61	Cabinet with Tools		18 Months from date of contract signing	3pcs				
MEE 62	Dial Gauge		18 Months from date of contract signing	12pcs				
MEE 63	Marking out tools		18 Months from date of contract signing	12pcs				

MEE 64	Measuring Tools Set		18 Months from date of contract signing	1pc				
MEE 65	Basic Hand Tools Set		18 Months from date of contract signing	1pc				
MEE 66	Hand tools		18 Months from date of contract signing	12pcs				
MEE 67	sheet metal tools		18 Months from date of contract signing	1pc				
MEE 68	FILES		18 Months from date of contract signing	12pcs				
MEE 69	REAMERS		18 Months from date of contract signing	12pcs				
MEE 70	Heavy Duty Photocopiers		18 Months from date of contract signing	1pc				
MEE 71	Hydraulics Bench and its accessories		18 Months from date of contract signing	1pc				

MEE 72	Gasoline & Alternative Fuels Engine Test Bed		18 Months from date of contract signing	1pc				
MEE 73	Diesel Fuel Engine test bed		18 Months from date of contract signing	1pc				
MEE 74	Hydraulic Braking Systems trainer		18 Months from date of contract signing	1pc				
MEE 75	21st century learning system for: Mechanical Engineering Foundation Programs		18 Months from date of contract signing	1pc				
Totals Exclusive of Taxes								
Taxes								
Totals Inclusive of Taxes								
							Total Price	

Name of Bidder: _____

Signature of Bidder: _____

Date: _____

Totals Exclusive of Taxes							
Taxes							
Totals Inclusive of Taxes							
						Sub-Total Price	

Name of Bidder: _____

Signature of Bidder: _____

Date: _____

Price and Completion Schedule - Related Services

	Currencies in accordance with ITB 15	Date: _____ OCBI / LCB No: _____ Alternative No: _____ Page N° _____ of _____

1	2	3	4	5	6	7
Service N°	**Description of Services (excludes inland transportation and other services required in the Purchaser's Country to convey the goods to their final destination)**	**Country of Origin**	**Delivery Date at place of Final destination**	**Quantity and physical unit**	**Unit price**	**Total Price per Service (Col. 5*6 or estimate)**
1	Equipment pre-inspection: The supplier shall organize pre-inspection of equipment in the country of origin before shipping into the country by members of the pre-inspection team nominated by the employer		Not later than 12 months from date of contract signing	5		
2.	Training and Services Related to Equipment/Machines Supplied should include: i. Training of members of the teaching staff and technicians on Major and Routine Maintenance of equipment/ Machines, ii. Training members of the teaching staff and technicians on Use of the machines/equipment (i.e the total scope of use equipment/machines and experiments they can perform)		Not later than 18 months from date of contract signing	10		
3.	Training manuals: Bidder must provide hard copies and soft copies of Training manuals in English for the range of experiments/operation for each equipment/machines supplied Hard copy and a soft copy for each equipment		Not later than 18 months from date of contract signing	5 sets		
4.	Installation, testing and commissioning of equipment/ machines: Bidders must install, test, calibrate and commission the equipment supplied		Not later than 18 months from date of contract signing	All equipment in each lot supplied		

5.	Branding of equipment: 1. Each piece of equipment should be branded/tagged as follows: "GoK/AfDB TVETE III-MTTI…";followed by a serial number 2. The branding/tagging words should be permanent and will be either engraved on a small metal plate and riveted on metallic machines/equipment or engraved on the item.		Not later than 18 months from date of contract signing	All equipment in each lot supplied		
				Sub - Total Price		

Name of Bidder: _____

Signature of Bidder: _____

Date: _____

Price Schedule: Goods Manufactured Outside the Purchaser's Country, to be Imported Automotive Engineering Equipment for Aldai Technical Training Institute

				(Group C Bids, goods to be imported) Currencies in accordance with ITB 15			Date: _____ OCBI / LCB No: _____ Alternative No: _____ Page N° _____ of _____	
1	2	3	4	5	6	7	8	9
Line Item N°	Description of Goods	Country of Origin	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price CIP FINAL DESTINATION **Aldai Technical Training Institute**	CIP Price per line item (Col. 5x6)	Price per line item for inland transportation and other services required in the Purchaser's Country to convey the Goods to their final destination as specified in BDS in accordance with ITB 14.9 (b) (ii) [This column is not applicable if destination as per column 6 under ITB 14.9 (b) (i) and final destination as per ITB 14.9 (b) (ii) is the same]	Total Price per Line item (Col. 7+8)

AEE 1	CNC lathe machine		18 Months from date of contract signing	1				
AEE 2	CNC Milling Machine		18 Months from date of contract signing	1				
AEE 3	Universal Milling Machine		18 Months from date of contract signing	1				
AEE 4	Lathe Machine		18 Months from date of contract signing	1				
AEE 5	Radial Drilling Machine		18 Months from date of contract signing	1				
AEE 6	Power Saws, Band, Horizontal		18 Months from date of contract signing	1				
AEE 7	Welding Training Set		18 Months from date of contract signing	1				
AEE 9	Spot Welding Machine		18 Months from date of contract signing	1				

AEE 10	MIG welding machine 250 amp		18 Months from date of contract signing	1				
AEE 11	TIG welding machine 250 amp		18 Months from date of contract signing	1				
AEE 12	Gas metal arc welding (GMAW), /metal inert gas (MIG) welding / metal active gas (MAG) welding		18 Months from date of contract signing	1				
AEE 13	Universal Testing Machine		18 Months from date of contract signing	1				
AEE 14	Torsion Testing Machine		18 Months from date of contract signing	1				

AEE 15	Ultrasonic Flaw Detector		18 Months from date of contract signing	1				
AEE 16	Auto Collimator		18 Months from date of contract signing	1				
AEE 17	Universal Profile Projector		18 Months from date of contract signing	1				
AEE 18	Angle Dekkor		18 Months from date of contract signing	1				
AEE 19	Desk Top Computers		18 Months from date of contract signing	1				
AEE 20	Auto-CAD and Anti-virus softwares		18 Months from date of contract signing	1				
AEE 21	Plotters		18 Months from date of contract signing	1				
AEE 22	Printers Heavy Duty		18 Months from date of contract signing	1				
AEE 23	Light Crystal Display (LCD)/ Projector		18 Months from date of contract signing	1				

AEE 24	Software for all computers		18 Months from date of contract signing	1				
AEE 25	Work Done by a Variable Force Apparatus		18 Months from date of contract signing	1				
AEE 26	Gear Trains Apparatus		18 Months from date of contract signing	1				
AEE 27	Crank and Connection Rod		18 Months from date of contract signing	1				
AEE 28	Toggle with Single and Double Action		18 Months from date of contract signing	1				
AEE 29	Cam and Follower Apparatus		18 Months from date of contract signing	1				
AEE 30	Flywheel Apparatus		18 Months from date of contract signing	1				
AEE 31	Wall Mounted Screw Jack		18 Months from date of contract signing	1				

AEE 32	Mechanics / Machine Friction of Belts Apparatus		18 Months from date of contract signing	1				
AEE 33	Rope - Belt Friction Apparatus		18 Months from date of contract signing	1				
AEE 34	Viscosity Measuremen t Apparatus		18 Months from date of contract signing	1				
AEE 35	Condition Monitoring Equipment		18 Months from date of contract signing	1				
AEE 36	Set of MEASURING TOOLS		18 Months from date of contract signing	1				
AEE 37	Vernier Caliper		18 Months from date of contract signing	12				
AEE 38	Vernier HT. Gauge		18 Months from date of contract signing	12				
AEE 39	Measuring Tools Set		18 Months from date of contract signing	1				
AEE 40	Misc. Hand Tools		18 Months from date of contract signing	1				

AEE 41	Anvil With Stand		18 Months from date of contract signing	6				
AEE 42	Figure Stamp Set		18 Months from date of contract signing	12				
AEE 43	Bench Vice		18 Months from date of contract signing	12				
AEE 44	Pipe Wrench		18 Months from date of contract signing	12				
AEE 45	Open Ended Wrench Set		18 Months from date of contract signing	12				
AEE 46	Vice Grip Pliers		18 Months from date of contract signing	12				
AEE 47	Screwdrivers		18 Months from date of contract signing	12				
AEE 48	Hacksaw		18 Months from date of contract signing	12				
AEE 49	Tool Box		18 Months from date of contract signing	6				
AEE 50	Blow Lamp		18 Months from date of contract signing	12				
AEE 51	Soldering Iron		18 Months from date of contract signing	12				
AEE 52	Punch & Chisel Set		18 Months from date of contract signing	12				

AEE 53	Tap & Die Set, Metric Small		18 Months from date of contract signing	12				
AEE 54	Tap & Die Set, Metric Large		18 Months from date of contract signing	12				
AEE 55	Tap & Die Set, Bsw		18 Months from date of contract signing	12				
AEE 56	Wing Divider		18 Months from date of contract signing	12				
AEE 57	Protractor		18 Months from date of contract signing	12				
AEE 58	Universal Surface Gauge		18 Months from date of contract signing	12				
AEE 59	Plumb & Spirit Level		18 Months from date of contract signing	12				
AEE 60	Riveting tools		18 Months from date of contract signing	12				
AEE 61	Screwstarter Set		18 Months from date of contract signing	12				
AEE 62	Cabinet with Tools		18 Months from date of contract signing	3				

AEE 63	Dial Gauge		18 Months from date of contract signing	12				
AEE 64	Marking out tools		18 Months from date of contract signing	12				
AEE 65	Measuring Tools Set		18 Months from date of contract signing	1				
AEE 66	Basic Hand Tools Set		18 Months from date of contract signing	1				
AEE 67	Hand tools		18 Months from date of contract signing	12				
AEE 68	sheet metal tools		18 Months from date of contract signing	1				
AEE 69	FILES		18 Months from date of contract signing	12				
AEE 70	REAMERS		18 Months from date of contract signing	12				
AEE 71	Heavy Duty Photocopiers		18 Months from date of contract signing	1				
AEE 72	Hydraulics Bench and its accessories		18 Months from date of contract signing	1				
AEE 73	Gasoline & Alternative Fuels Engine Test Bed		18 Months from date of contract signing	1				

AEE 74	Diesel Fuel Engine test bed		18 Months from date of contract signing	1				
AEE 75	Hydraulic Braking Systems trainer		18 Months from date of contract signing	1				
AEE 76	Automatic Gear box		18 Months from date of contract signing	1				
AEE 77	Multi point injection trainer		18 Months from date of contract signing	1				
AEE 78	Motor electrical wiring training board		18 Months from date of contract signing	5				
AEE 79	Cantilever waste oil drawing unit		18 Months from date of contract signing	1				
AEE 80	Tyre bred separator		18 Months from date of contract signing	1				
AEE 81	Tyre changer		18 Months from date of contract signing	1				
AEE 82	Motor vehicle Electronic/electricity trainer		18 Months from date of contract signing	Assorted				

AEE 83	Ultrasonic flow detector		18 Months from date of contract signing	1				
AEE 84	Dye penetrant MD		18 Months from date of contract signing	1 set				
AEE 85	Eddy current MD tester		18 Months from date of contract signing	1				
AEE 86	Automotive Oscilloscopes Diagnostic software Kits		18 Months from date of contract signing	2 sets				
AEE 87	Diagnostic Testers		18 Months from date of contract signing	5 sets each				
AEE 88	Emission Analyzers		18 Months from date of contract signing	3				
AEE 89	Diagnostic Scanners		18 Months from date of contract signing	2 sets				
AEE 90	Lubrication Equipment and pipe work		18 Months from date of contract signing	1 set				
AEE 91	Diesel Fuel Delivery system		18 Months from date of contract signing	1 set				
AEE 92	Probes		18 Months from date of contract signing	10 sets				
AEE 93	Brake Lathes		18 Months from date of contract signing	1 set				

AEE 94	Wheel Balancer kits		18 Months from date of contract signing	2 sets'				
AEE 95	Wheel Aligners Kits-laser type		18 Months from date of contract signing	1 sets				
AEE 96	Wheel Aligners Kits-computerized		18 Months from date of contract signing	1 set				
AEE 97	Torque converter model		18 Months from date of contract signing	2				
AEE 98	Fluid flywheel model		18 Months from date of contract signing	1				
AEE 100	In-line injection pump model (diesel)		18 Months from date of contract signing	1				
AEE 101	Piston ring squeezer		18 Months from date of contract signing	2				
AEE 102	Diesel pump test bench machine.		18 Months from date of contract signing	1				
AEE 103	Starter motor armature growler tester.		18 Months from date of contract signing	1				
AEE 104	Spray paint kit		18 Months from date of contract signing	2				
AEE 105	Spray gun		18 Months from date of contract signing	1				

AEE 106	Fuel pump tester (petrol) injection		18 Months from date of contract signing	1				
AEE 107	Injector tester petrol		18 Months from date of contract signing	1				
AEE 108	Battery Charger		18 Months from date of contract signing	1				
AEE 109	Spark plug tester		18 Months from date of contract signing	4				
AEE 110	Hydraulic Body Jack		18 Months from date of contract signing	2				
AEE 111	Mechanical Body Jack		18 Months from date of contract signing	4				
AEE 112	Valve compressor spring		18 Months from date of contract signing	4				
AEE 113	Radiator flushing gun		18 Months from date of contract signing	3				
Totals Exclusive of Taxes								
Taxes								
Totals Inclusive of Taxes								
							Sub-Total Price	

Name of Bidder: _____

Signature of Bidder: _____

Date: _____

Price and Completion Schedule - Related Services

		Currencies in accordance with ITB 15			Date: _____ OCBI / LCB No: _____ Alternative No: _____ Page N° _____ of _____	
1	2	3	4	5	6	7
Service N°	**Description of Services (excludes inland transportation and other services required in the Purchaser's Country to convey the goods to their final destination)**	**Country of Origin**	**Delivery Date at place of Final destination**	**Quantity and physical unit**	**Unit price**	**Total Price per Service (Col. 5*6 or estimate)**

1	Equipment pre-inspection: The supplier shall organize pre-inspection of equipment in the country of origin before shipping into the country by members of the pre-inspection team nominated by the employer		Not later than 12 months from date of contract signing	5		
2.	Training and Services Related to Equipment/Machines Supplied should include: i. Training of members of the teaching staff and technicians on Major and Routine Maintenance of equipment/ Machines, ii. Training members of the teaching staff and technicians on Use of the machines/equipment (i.e the total scope of use equipment/machines and experiments they can perform)		Not later than 18 months from date of contract signing	10		
3.	Training manuals: Bidder must provide hard copies and soft copies of Training manuals in English for the range of experiments/operation for each equipment/machines supplied Hard copy and a soft copy for each equipment		Not later than 18 months from date of contract signing	5 sets		
4.	Installation, testing and commissioning of equipment/ machines: Bidders must install, test, calibrate and commission the equipment supplied		Not later than 18 months from date of contract signing	All equipment in each lot supplied		

5.	Branding of equipment: 1. Each piece of equipment should be branded/tagged as follows: "GoK/AfDB TVETE III-ATTI…";followed by a serial number 2. The branding/tagging words should be permanent and will be either engraved on a small metal plate and riveted on metallic machines/equipment or engraved on the ítem.		Not later than 18 months from date of contract signing	All equipment in each lot supplied		
				Sub - Total Price		

Name of Bidder: _____

Signature of Bidder: _____

Date: _____

Grand Total Bid Price (Goods and Related Services)

	CIP Institution	**Bid Price for Goods and related services**
1	Sub - Total Bid Price – Lot 2 - Supply, Delivery, Installation, Calibration, Commissioning and Training on the Use and Maintenance of Mechanical Engineering Equipment to Mukurwe-Ini Technical Training Institute– Nyeri County and Automotive Engineering Equipment to Aldai Technical Training Institute – Nandi County	
	Grand Total Bid Price	

Name of Bidder: _____

Signature of Bidder: _____

Date: _____

Bidder Information Form -Form ELI-1.1

[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: *[insert date (as day, month and year) of Bid submission*]
OCBI / LCB No.: *[insert number of bidding process]*
Alternative No.: *[insert identification No if this is a Bid for an alternative]*
Page _____ of_____ pages

1. Bidder's Name *[insert Bidder's legal name]*
2. In case of JV, legal name of each member: *[insert legal name of each member in JV]*
3. Bidder's actual or intended country of registration: *[insert actual or intended country of registration]*
4. Bidder's year of registration: *[insert Bidder's year of registration]*
5. Bidder's Address in country of registration: *[insert Bidder's legal address in country of registration]*
6. Bidder's Authorized Representative Information Name: *[insert Authorized Representative's name]* Address: *[insert Authorized Representative's Address]* Telephone/Fax numbers: *[insert Authorized Representative's telephone/fax numbers]* Email Address: *[insert Authorized Representative's email address]*
7. Attached are copies of original documents of *[check the box(es) of the attached original documents]* ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.4. ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1.

- ☐ In case of state-owned enterprise or institution, in accordance with ITB 4.6 documents establishing:
  - Legal and financial autonomy
  - Operation under commercial law
  - Establishing that the Bidder is not under the supervision of the Purchaser

8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. *[If required under BDS ITB 45.1, the successful Bidder shall provide additional information on beneficial ownership, using the Beneficial Ownership Disclosure Form.]*

Bidder's JV Members Information Form-Form ELI-1.2

[The Bidder shall fill in this Form in accordance with the instructions indicated below. The following table shall be filled in for the Bidder and for each member of a Joint Venture].

Date: *[insert date (as day, month and year) of Bid submission*]
OCBI / LCB No.: *[insert number of Bidding process]*
Alternative No.: *[insert identification No if this is a Bid for an alternative]*
Page _____ of_ _____ pages

1. Bidder's Name: *[insert Bidder's legal name]*
2. Bidder's JV Member's name: *[insert JV's Member legal name]*
3. Bidder's JV Member's country of registration: *[insert JV's Member country of registration]*
4. Bidder's JV Member's year of registration: *[insert JV's Member year of registration]*
5. Bidder's JV Member's legal address in country of registration: *[insert JV's Member legal address in country of registration]*
6. Bidder's JV Member's authorized representative information Name: *[insert name of JV's Member authorized representative]* Address: *[insert address of JV's Member authorized representative]* Telephone/Fax numbers: *[insert telephone/fax numbers of JV's Member authorized representative]* Email Address: *[insert email address of JV's Member authorized representative]*
7. Attached are copies of original documents of *[check the box(es) of the attached original documents]* ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4. ☐ In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Purchaser, in accordance with ITB 4.6.

8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership. *[If required under BDS ITB 45.1, the successful Bidder shall provide additional information on beneficial ownership for each JV member using the Beneficial Ownership Disclosure Form.]*

Technical Bid-Base Bid

[Note for information of Bidder: *Bidder shall demonstrate compliance with the Purchaser's requirements and Technical Specifications as described in Section VII of the Bidding Documents. Any departures or deviations from the required Technical Specifications shall be highlighted and if there are none, full compliance shall be confirmed.*

The Bidder shall provide complete information and documentation of technical standards, codes, designs and specifications, of Goods and Related Services offered along with Model number or any other identification number of the manufacturer wherever applicable and in accordance with all requirements mentioned in ITB 16. Bidding document may stipulate a Table, Form, or Template to present Technical designs, specification, characteristics, functional or other guaranteed parameters, the Bidder shall invariably use the same without any changes and ensure that all requested details and supporting documents are provided. Lack or omission or non-confirmation of substantial details, information and documentation for major or essential technical requirements/features may result in rejection of the Bid.

If the details of specifications for the offered Goods in the written text of the Bid differ from the details provided in the supporting literature, drawings or other parts of the document, all such discrepancies shall be explained to the satisfaction of the Purchaser failing which the Purchaser, may reject the Bid, or if deemed appropriate, may consider the information in the written text of the Bid to be valid ignoring details in other parts of the Bid. Failure of the Bidder to confirm this will result in rejection of the Bid.

Bid shall establish conformity with the Purchaser's Specifications and requirements as specified in the Bidding Document along with all supporting documents mentioned in ITB 16. The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.

Any deviations in the technical standards, codes, designs or specifications or other requirements from those stated in the Bidding Documents shall be explained indicating their impact on the performance requirements, characteristics or parameters of the Goods and Related Services required. To this end, for any such deviations to be acceptable, Bid shall establish substantial responsiveness to the required technical specifications by explaining and documenting for the offered Goods, and Related Services equivalency with or improvement to the required technical standards, codes, designs and Specifications.

*Any Major deviation from the Purchaser's requirements shall be the cause for rejection of the Bid. Any deviation which in the Bidder's opinion is considered minor, the Bidder shall provide evidence to this effect including evidence of any monetary implications caused by such deviation. The Purchaser's evaluation shall be independent of Bidder's opinion on such matters and shall be final**]***

Technical Bid-Alternative Bid

(If permitted in the Bidding Document)

[Note for information of Bidder: Text under Appendix A applicable for the Base Bid is also applicable for Alternative Bid. *In addition, the Bidder shall explain and establish to the satisfaction of the Purchaser how the specification under the Alternative bid is equal or better than the Purchaser's required Specifications and that offered in the Base Bid when Alternative Bid is permitted only with the Base Bid]*

Commercial Terms and Conditions

[Bidder shall specify any deviations to the provisions of the Bidding Document (other than Technical Specifications) in particular those specified in Part 3 of the Bidding document including General and Special Conditions of Contract. If "None" it shall be confirmed accordingly]

Historical Contract Non-Performance--Pending Litigation--Litigation History Form CON-2

Bidder's Legal Name: _____ Date: _____

JV Member's Legal Name: _____

OCBI / LCB No.: _____

Page _____ of _____ pages

<table>
<tr><td colspan="4">Non-Performing Contracts in accordance with Section III, Evaluation Criteria</td></tr>
<tr><td colspan="4">• Contract non-performance did not occur during the stipulated period, in accordance with Section III, Evaluation Criteria
• Contract non-performance during the stipulated period, in accordance with Section III, Evaluation Criteria. List all Non-performed contracts since date specified in the Section III.</td></tr>
<tr><td>Year</td><td>Non-performed portion of contract</td><td>Contract Identification</td><td>Total Contract Amount (current value, currency, exchange rate and US$ equivalent)</td></tr>
<tr><td>[insert year]</td><td>[insert amount and percentage]</td><td>Contract Identification: [indicate complete contract name/number, and any other identification]
Name of Purchaser: [insert full name]
Address of Purchaser: [insert street/city/country]
Reason(s) for non-performance: [indicate main reason(s)]</td><td>[insert amount]</td></tr>
<tr><td colspan="4">Pending Litigation, in accordance with Section III, Evaluation Criteria</td></tr>
<tr><td colspan="4">• No pending litigation in accordance Section III, Evaluation Criteria
• Pending litigation in accordance with Section III, Evaluation Criteria, as indicated below. List all pending litigation contracts.</td></tr>
</table>

Year	Brief reasons for litigation	Contract Identification	Total Contract Amount (current value, US$ equivalent)
_____	_____	Contract Identification: Name of Purchaser: Address of Purchaser: Matter in dispute: Amount in dispute	_____
_____	_____	Contract Identification: Name of Purchaser: Address of Purchaser: Matter in dispute: Amount in dispute:	_____
Form CON-2 Continued			
Litigation History in accordance with Section III—List all contracts since the date specified in Section III indicating:			
Year	Brief reasons for litigation	Contract Identification Contract Identification: Name of Purchaser: Address of Purchaser: Matter in dispute: Amount in dispute Court or Arbitral award decision:	Total Contract Amount (current value, US$ equivalent)

Financial Situation

Form FIN – 3.1

Historical Financial Performance
Bidder's Legal Name: _____ Date: _____
JV Member's Legal Name: _____ *OCBI / LCB* No.: _____ Page _____ of _____ pages
To be completed by the Bidder and, if *JV*, by each member

Financial information in US$ equivalent	Historic information for previous _____ (3) years (US$ equivalent in 000s)						
	Year 1	**Year 2**	**Year 3**	**Year …**	**Year n**	**Avg.**	**Avg. Ratio**
Information from Balance Sheet							
Total Assets (TA)							
Total Liabilities (TL)							
Net Worth (NW)							
Current Assets (CA)							
Current Liabilities (CL)							
Information from Income Statement							
Total Revenue (TR)							
Profits Before Taxes (PBT)							

• Attached are copies of financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following conditions:

(a) Must reflect the financial situation of the Bidder or partner to a *JVCA*, and not sister or parent companies;
(b) Historic financial statements must be audited by a certified accountant;
(c) Historic financial statements must be complete, including all notes to the financial statements;
(d) Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Average Annual Turnover

Form FIN – 3.2

Bidder's Legal Name: _____ Date: _____

JV Member Legal Name: _____ *OCBI / LCB No.*: _____

Page _____ of _____ pages

To be completed by the Bidder and, if *JV*, by each member

Annual turnover data		
Year	Amount and Currency	US$ equivalent
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
*Average Annual Turnover	_____	_____

*Average annual turnover calculated as total certified payments received for supply in progress or completed, divided by the number of years as per Section III, Evaluation Criteria.

Experience—Form Exp-1

Bidder's Legal Name: _____
Manufacturer's Legal name: _____ Date: _____
JV 's Legal Name: _____ OCBI / LCB No.: _____
Page _____ of _____ pages

If Bidder is JV specify only those contracts that were performed by the same JV

Complete all information requested below that are required to assess Bidder's qualifications as per post qualification criteria specified under Section III

To be completed by Bidder, Bidder and Manufacturer if Bidder is not the Manufacturer, and by JV if JV is the Bidder

Similar Contract Number: ___ of ___ required.	**Information**	
Contract Identification	_____	
Award date Completion date	_____ _____	
Role in Contract		
Total contract amount	_____	US$_____
Purchaser's Name:	_____	

Similar Contract Number: ___ of ___ required.	**Information**
Address: Telephone/fax number: E-mail:	
Description of Goods	
Quantity of Goods supplied under this contract	
Quantity of Goods supplied under all other contracts since the date indicated in Section III- Provide similar separate details as for this contract for all such other contracts	
Form Exp-1 continued	
First date of manufacturing similar goods as offered in the bid	
Period of Successful use/operation –Number of Years	
Installed manufacturing capacity—Number of units per month of item (s) specified in section III	
Demonstrated proven capacity to supply since the date and for Item (s) specified in Section III	

Form of Bid Security

(Bank Guarantee)

[The bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[Purchaser to insert its name and address]*
IFB No.: *[Purchaser to insert same IFB No as advertised]*
Alternative No.: *[Insert identification No if this is a Bid for an alternative]*
***OCBI / LCB No**: [Purchaser to insert same OCBI number as in procurement plan]*
Date: *[Insert date of issue]*
Bid Guarantee No.: *[Insert guarantee reference number]*
Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ *[insert name of the Bidder, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members thereof]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Bid (hereinafter called "the Bid") for the execution of _____ under Invitation for Bids No. _____ _ ("the IFB") and Open Competitive Bidding (International) No---------- (" the OCBI").

Furthermore, we understand that, according to the Beneficiary's conditions, Bids must be supported by a Bid guarantee.

At the request of the Applicant to issue this guarantee, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Bid during the period of Bid validity set forth in the Applicant's Letter of Bid ("the Bid Validity Period"), or any extension thereto provided by the Applicant; or

(b) having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period or any extension thereto provided by the Applicant, (i) has failed to sign the contract agreement, or (ii) has

failed to furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee will expire: (a) if the Applicant is the successful Bidder, upon our receipt of copies of the Contract agreement signed by the Applicant and the performance security issued to the Beneficiary in relation to such Contract agreement; or (b) if the Applicant is not the successful Bidder, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Bidding process; or (ii) twenty-eight days after the end of the Bid Validity Period.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

_____

[Signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

Form of Bid Security (Bid Bond)

Date: *[date (as day, month and year)]*
IFB No.----------
OCBI / LCB No.: *[number as in procurement plan]*.
Alternative No.: *[insert identification No if this is a Bid for an alternative]*

[The Surety shall fill in this Bid Bond Form in accordance with the instructions indicated.]

BOND NO. _____

BY THIS BOND *[name of Bidder]* as Principal (hereinafter called "the Principal"), and *[name, legal title, and address of surety],* **authorized to transact business in** *[name of country of Purchaser],* as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[name of Purchaser]* as Oblige (hereinafter called "the Purchaser") in the sum of *[amount of Bond]*[2] *[amount in words]*, for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted or will submit a written Bid to the Purchaser dated the ___ day of _____, 20__, for the supply of *[name of Contract]* (hereinafter called the "Bid").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

(a) has withdrawn its Bid during the period of Bid validity set forth in the Principal's Letter of Bid ("the Bid Validity Period"), or any extension thereto provided by the Principal; or

(b) having been notified of the acceptance of its Bid by the Purchaser during the Bid Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to Bidders ("ITB") of the Purchaser's bidding document.

then the Surety undertakes to immediately pay to the Purchaser up to the above amount upon receipt of the Purchaser's first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

---

[2] The amount of the Bond shall be denominated in the currency of the Purchaser's Country or the equivalent amount in a freely convertible currency.

The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiration of the Bid Validity Period set forth in the Principal's Letter of Bid or any extension thereto provided by the Principal.

IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this ____ day of _____ 20__.

Principal: _____ Surety: _____

Corporate Seal (where appropriate)

_____ _____

(Signature) *(Signature)*
(Printed name and title) *(Printed name and title)*

Form of Bid-Securing Declaration

[The Bidder shall fill in this Form in accordance with the instructions indicated.]

Date: *[date (as day, month and year)]*
OCBI / LCB No.: *[number as in procurement plan]*
Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[complete name of Purchaser]*

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with the Purchaser for the period of time of *[insert number of months or years consistent with BDS 19.9],* if we are in breach of our obligation(s) under the Bid conditions, because we:

(a) have withdrawn our Bid during the period of Bid validity specified in the Letter of Bid or any extension thereto provided by us; or

(b) having been notified of the acceptance of our Bid by the Purchaser during the period of Bid validity, (i) fail or refuse to sign the Contract; or (ii) fail or refuse to furnish the Performance Security, if required, in accordance with the ITB.

The start date of suspension shall be the first date we perform any of the actions mentioned in paragraphs (a) and (b) above. We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Name of the Bidder*****_____

Name of the person duly authorized to sign the Bid on behalf of the Bidder******_____

Title of the person signing the Bid_____

Signature of the person named above_____

Date signed _____ day of _____,

_____

*****: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the Bid.]

Manufacturer's Authorization

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its Bid, if so indicated in the ***BDS.****]*

Date: *[insert date (as day, month and year) of Bid submission]*
OCBI / LCB No.: *[insert number as in procurement plan]*
Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer],* who are official manufacturers of *[insert type of goods manufactured],* having factories at [insert full address of Manufacturer's factories], do hereby authorize *[insert complete name of Bidder]* to submit a Bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods],* and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Dated on _____ day of _____, _____ *[insert date of signing]*

Section V - Eligible Countries

Eligibility for the Provision of Goods, Works and Services in Bank Group Financed Procurement

A. Provisions under Section 5 "Eligibility" of the Procurement Policy for Bank Group Funded Operations and Chapter A2 of the Operations Procurement Manual under Procurement Framework of the African Development Bank

1. The African Development Fund (ADF) permits firms and individuals from all countries to offer goods, works and services for ADF funded projects.

   However, the proceeds of any Financing undertaken in the operations of the African Development Bank (ADB) and the Nigeria Trust Fund (NTF) shall be used for procurement of goods and works, including the related services, provided by bidders from Eligible[3] Countries.[4] Any conditions for participation shall be limited to those that are essential to ensure the firm's capability to fulfill the contract in question. In the case of ADB and NTF, bidders from non-Member Countries offering goods, works and related services (including transportation and insurance) are not eligible even if they offer these from Eligible Member Countries. Any waiver to this rule will be in accordance with the Articles 17(1) (d) of the Agreement Establishing the African Development Bank and 4.1 of the Agreement Establishing the Nigeria Trust Fund.

B. Rules and Procedures for Procurement of Goods and Works

Overview

1. The eligibility criteria for participation in the supply of goods, works and related services, to be procured through the ADB and NTF Financing, derive from the requirements of the Agreement Establishing the African Development Bank, Article 17.1.d, and the Agreement Establishing the Nigeria Trust Fund, Article 4.1. The foregoing requirements basically prescribe two types of eligibility criteria:

   (a) The eligibility of the bidder;

   (b) The eligibility of the goods, works and related services.

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3 Refer to Bank Framework for additional information on Eligibility.

4 "Eligible Countries" shall mean: (a) in the case of the African Development Bank (ADB) and the Nigeria Trust Fund, the Member Countries of the ADB; and (b) in the case of the African Development Fund (ADF), any country.

Eligibility of the Bidder Under the ADB & NTF Financing

2. The eligibility of the bidder shall be based on nationality, in accordance with the following rules:

   (a) Natural Persons: A natural person is eligible if he or she is a national of a Member Country of the ADB. Where a person has more than one nationality, such a person shall be eligible if the nationality indicated in his or her bid is that of a Member Country of the ADB.

   (b) Corporations: A corporation is eligible if it satisfies the following criteria:

      i) it is incorporated in a country that is a Member of the ADB;

      ii) it is a national of a country that is a Member of the ADB, as determined by the law of its place of incorporation;

      iii) it has its principal place of business in a country that is a Member of the ADB.

   (c) Joint Ventures and Associations: An unincorporated joint venture, partnership, or association, shall be eligible if more than 50% of the value of its works and/or services is executed by its members satisfying the eligibility requirements for individuals or corporations.

Eligibility of the Goods, Works and Related Services

3. In order to be eligible, the goods to be procured must have been mined, grown, or produced, in the form in which they are purchased, in an Eligible Member Country.
4. For works contracts, which may include civil works, plant construction, or turnkey contracts, the contractor must satisfy the nationality criteria of eligibility, either as a natural person, or corporation, or joint venture and association. Labour, equipment, and materials needed for carrying out the works contract, shall be supplied from Eligible Member Countries.
5. For contracts, which have been awarded on the basis of Cost, Insurance and Freight (CIF), or Carriage and Insurance Paid (CIP), bidders shall be free to arrange for ocean and other transportation, and the related insurance, from any Eligible Member Country. On the other hand, where goods are shipped on FOB basis, and the Bank has agreed to finance transportation and insurance separately, which are arranged by the purchaser, under a separate contract, the Bank shall be satisfied that the services are supplied from Eligible Member Countries.

List of Eligible Countries

6. List of Eligible countries can be found in African Development Bank's website:

Eligible Countries

Ineligible Countries in reference to ITB 4.8 and ITB 5.1

7. In reference to ITB 4.8 and ITB 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this Bidding process:

   Under ITB 4.8(a) and ITB 5.1: *[insert a list of the countries following approval by the Bank to apply the restriction or state "none"]*.

   Under ITB 4.8(b) and ITB 5.1: *[insert a list of the countries following approval by the Bank to apply the restriction or state "none"]*

Section VI - Fraud and Corruption
(Section VI shall not be modified)

1. Purpose

1.1 The Bank's Integrity Framework and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption[5].

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[6];

ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party[7] to obtain financial or other benefit or to avoid an obligation;

iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

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[5] In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

[6] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the procurement process or contract execution, including Bank staff and employees of other organizations taking or reviewing procurement decisions.

[7] For the purpose of this sub-paragraph, "party" refers to a public official, including Bank staff and employees of other organizations taking or reviewing procurement decisions.; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution."

v. "obstructive practice" is:

(a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

d. Pursuant to the Bank's Integrity Framework, and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other

manner;[8] (ii) to be a nominated[9] sub-contractor, consultant, manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;

e. Requires that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect[10] all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

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8 For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

9 A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

10 Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

Part 2 – Supply Requirements

Section VII - Schedule of Requirements

Contents

1. List of Goods and Delivery Schedule – Mechanical Engineering Equipment for Mukurwe-ini Technical Training Institute

Line Item N°	Description of Goods	Quantity	Physical unit	Final Destination (Project Site) as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date	Latest Delivery Date	Bidder's offered Delivery date *[to be provided by the Bidder]*
MEE 1	CNC lathe machine	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 2	CNC Milling Machine	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 3	Universal Milling Machine	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 4	Lathe Machine	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 5	Radial Drilling Machine	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 6	Power Saws, Band, Horizontal	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 7	Welding Training Set	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 8	Spot Welding Machine	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 9	MIG welding machine 250 amp	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

MEE 10	TIG welding machine 250 amp	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 11	Gas metal arcwelding (GMAW), /metal inert gas (MIG) welding / metal active gas (MAG) welding	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 12	Universal Testing Machine	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 13	TorsionTesting Machine	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 14	Ultrasonic Flaw Detector	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 15	Auto Collimator	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 16	Universal Profile Projector	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 17	Angle Dekkor	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 18	Desk Top Computers	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 19	Auto-CAD and Anti-virus software	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 20	Plotters	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 21	Printers Heavy Duty	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 22	Light Crystal Display (LCD)/ Projector	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

MEE 23	Software for all computers	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 24	Work Done by a Variable Force Apparatus	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 25	Gear Trains Apparatus	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 26	Crank and Connection Rod	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 27	Toggle with Single and Double Action	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 28	Cam and Follower Apparatus	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 29	Flywheel Apparatus	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 30	Wall Mounted Screw Jack	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 31	Mechanics / Machine Friction of Belts Apparatus	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 32	Rope – Belt Friction Apparatus	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 33	Viscosity Measurement Apparatus	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 34	Condition Monitoring Equipment	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 35	Set of MEASURING TOOLS	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

MEE 36	Vernier Caliper	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 37	Vernier HT. Gauge	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 38	Measuring Tools Set	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 39	Misc. Hand Tools	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 40	Anvil With Stand	6	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 41	Figure Stamp Set	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 42	Bench Vice	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 43	Pipe Wrench	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 44	Open Ended Wrench Set	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 45	Vice Grip Pliers	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 46	Screwdrivers	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 47	Hacksaw	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 48	Tool Box	6	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

MEE 49	Blow Lamp	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 50	Soldering Iron	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 51	Punch &Chisel Set	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 52	Tap& Die Set, Metric Small	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 53	Tap& Die Set, Metric Large	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 54	Tap& Die Set, Bsw	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 55	Wing Divider	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 56	Protractor	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 57	Universal Surface Gauge	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 58	Plumb & Spirit Level	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 59	Riveting tools	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 60	Screwstarter Set	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 61	Cabinet with Tools	3	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

MEE 62	Dial Gauge	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 63	Marking out tools	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 64	Measuring Tools Set	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 65	Basic Hand Tools Set	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 66	Hand tools	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 67	sheet metal tools	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 68	FILES	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 69	REAMERS	12	pcs	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 70	Heavy Duty Photocopiers	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 71	Hydraulics Bench and its accessories	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 72	Gasoline & Alternative Fuels Engine Test Bed	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 73	Diesel Fuel Engine test bed	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
MEE 74	Hydraulic Braking Systems trainer	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

MEE 75	21st century learning system	1	pc	Mukurwei-ini Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
Totals Exclusive of Taxes							
Taxes							
Totals Inclusive of Taxes							
						Total Price	

Name of Bidder: _____

Signature of Bidder: _____

Date: _____

2. List of Related Services and Completion Schedule

Service	Description of Service	Quantity	Physical Unit	Place where Services shall be performed	Final Completion Date(s) of Services
1	Equipment pre-inspection: The supplier shall organize pre-inspection of equipment in the country of origin before shipping into the country by members of the pre-inspection team nominated by the employer	5	*No*	country of origin of the equipment	Not later than 12 months from date of contract signing

2.	Training and Services Related to Equipment/Machines Supplied should include: i. Training of members of the teaching staff and technicians on Major and Routine Maintenance of equipment/ Machines, ii. Training members of the teaching staff and technicians on Use of the machines/equipment (i.e the total scope of use equipment/machines and experiments they can perform)	10	NO	Mukurwe-ini Technical Training Institute	Not later than 18 months from date of contract signing
3.	Training manuals: Bidder must provide hard copies and soft copies of Training manuals in English for the range of experiments/operation for each equipment/machines supplied Hard copy and a soft copy for each equipment	5 sets	Sets	Mukurwe-ini Technical Training Institute	Not later than 18 months from date of contract signing
4.	Installation, testing and commissioning of equipment/ machines: Bidders must install, test, calibrate and commission the equipment supplied	All equipment in each lot supplied	NO	Mukurwe-ini Technical Training Institute	Not later than 18 months from date of contract signing
5.	Branding of equipment: 1. Each piece of equipment should be branded/tagged as follows: "GoK/AfDB TVETE III-MTTI…"; followed by a serial number 2. The branding/tagging words should be permanent and will be both engraved on a small metal plate and riveted on metallic machines/equipment or engraved on the items.	All equipment in each lot supplied	NO	Mukurwe-ini Technical Training Institute	Not later than 18 months from date of contract signing

1. List of Goods and Delivery Schedule – Automotive Engineering Equipment for Aldai Technical Training Institute

Line Item N°	Description of Goods	Quantity	Physical unit	Final Destination (Project Site) as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date	Latest Delivery Date	Bidder's offered Delivery date [*to be provided by the Bidder*]
AEE 1	CNC lathe machine	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 2	CNC Milling Machine	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 3	Universal Milling Machine	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 4	Lathe Machine	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

AEE 5	Radial Drilling Machine	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 6	Power Saws, Band, Horizontal	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 7	Welding Training Set	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 9	Spot Welding Machine	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 10	MIG welding machine 250 amp	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 11	TIG welding machine 250 amp	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 12	Gas metal arc welding (GMAW), /metal inert gas (MIG) welding / metal active gas (MAG) welding	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 13	Universal Testing Machine	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 14	Torsion Testing Machine	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 15	Ultrasonic Flaw Detector	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 16	Auto Collimator	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 17	Universal Profile Projector	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 18	Angle Dekkor	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

AEE 19	Desk Top Computers	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 20	Auto-CAD and Anti-virus softwares	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 21	Plotters	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 22	Printers Heavy Duty	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 23	Light Crystal Display (LCD)/ Projector	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 24	Software for all computers	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 25	Work Done by a Variable Force Apparatus	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 26	Gear Trains Apparatus	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 27	Crank and Connection Rod	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 28	Toggle with Single and Double Action	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 29	Cam and Follower Apparatus	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 30	Flywheel Apparatus	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 31	Wall Mounted Screw Jack	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 32	Mechanics / Machine Friction of Belts Apparatus	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

AEE 33	Rope - Belt Friction Apparatus	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 34	Viscosity Measurement Apparatus	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 35	Condition Monitoring Equipment	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 36	Set of MEASURING TOOLS	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 37	Vernier Caliper	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 38	Vernier HT. Gauge	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 39	Measuring Tools Set	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 40	Misc. Hand Tools	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 41	Anvil With Stand	6	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 42	Figure Stamp Set	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 43	Bench Vice	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 44	Pipe Wrench	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 45	Open Ended Wrench Set	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 46	Vice Grip Pliers	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 47	Screwdrivers	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

AEE 48	Hacksaw	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 49	Tool Box	6	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 50	Blow Lamp	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 51	Soldering Iron	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 52	Punch & Chisel Set	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 53	Tap & Die Set, Metric Small	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 54	Tap & Die Set, Metric Large	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 55	Tap & Die Set, Bsw	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 56	Wing Divider	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 57	Protractor	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 58	Universal Surface Gauge	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 59	Plumb & Spirit Level	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 60	Riveting tools	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 61	Screwstarter Set	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 62	Cabinet with Tools	3	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 63	Dial Gauge	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 64	Marking out tools	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

AEE 65	Measuring Tools Set	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 66	Basic Hand Tools Set	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 67	Hand tools	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 68	sheet metal tools	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 69	FILES	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 70	REAMERS	12	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 71	Heavy Duty Photocopiers	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 72	Hydraulics Bench and its accessories	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 73	Gasoline & Alternative Fuels Engine Test Bed	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 74	Diesel Fuel Engine test bed	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 75	Hydraulic Braking Systems trainer	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 76	Automatic Gear box	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 77	Multi point injection trainer	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 78	Motor electrical wiring training board	5	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 79	Cantilever waste oil drawing unit	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 80	Tyre bred separator	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 81	Tyre changer	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

AEE 82	Motor vehicle Electronic/electricity trainer	Assorted	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 83	Ultrasonic flow detector	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 84	Dye penetrant MD	1 set	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 85	Eddy current MD tester	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 86	Automotive Oscilloscopes Diagnostic software Kits	2 sets	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 87	Diagnostic Testers	5 sets each	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 88	Emission Analyzers	3	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 89	Diagnostic Scanners	2 sets	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 90	Lubrication Equipment and pipe work	1 set	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 91	Diesel Fuel Delivery system	1 set	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 92	Probes	10 sets	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 93	Brake Lathes	1 set	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 94	Wheel Balancer kits	2 sets'	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 95	Wheel Aligners Kits- laser type	1 sets	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 96	Wheel Aligners Kits- computerized	1 set	sets	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 97	Torque converter model	2	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 98	Fluid flywheel model	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 100	In-line injection pump model (diesel)	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 101	Piston ring squeezer	2	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

AEE 102	Diesel pump test bench machine.	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 103	Starter motor armature growler tester.	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 104	Spray paint kit	2	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 105	Spray gun	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 106	Fuel pump tester (petrol) injection	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 107	Injector tester petrol	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 108	Battery Charger	1	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 109	Spark plug tester	4	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 110	Hydraulic Body Jack	2	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 111	Mechanical Body Jack	4	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 112	Valve compressor spring	4	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	
AEE 113	Radiator flushing gun	3	pcs	Aldai Technical Training Institute	9 Months From the date of contract signing	12 Months From the date of contract signing	

Name of Bidder: _____

Signature of Bidder: _____

Date: _____

2. List of Related Services and Completion Schedule

Service	Description of Service	Quantity	Physical Unit	Place where Services shall be performed	Final Completion Date(s) of Services
1	Equipment pre-inspection: The supplier shall organize pre-inspection of equipment in the country of origin before shipping into the country by members of the pre-inspection team nominated by the employer	5	*No*	country of origin of the equipment	Not later than 12 months from date of contract signing
2.	Training and Services Related to Equipment/Machines Supplied should include: i. Training of members of the teaching staff and technicians on Major and Routine Maintenance of equipment/ Machines, ii. Training members of the teaching staff and technicians on Use of the machines/equipment (i.e the total scope of use equipment/machines and experiments they can perform)	10	NO	Aldai Technical Training Institute	Not later than 18 months from date of contract signing
3.	Training manuals: Bidder must provide hard copies and soft copies of Training manuals in English for the range of experiments/operation for each equipment/machines supplied Hard copy and a soft copy for each equipment	5 sets	Sets	Aldai Technical Training Institute	Not later than 18 months from date of contract signing
4.	Installation, testing and commissioning of equipment/ machines: Bidders must install, test, calibrate and commission the equipment supplied	All equipment in each lot supplied	NO	Aldai Technical Training Institute	Not later than 18 months from date of contract signing

5.	Branding of equipment: 1. Each piece of equipment should be branded/tagged as follows: "GoK/AfDB TVETE III-ATTI…"; followed by a serial number 2. The branding/tagging words should be permanent and will be both engraved on a small metal plate and riveted on metallic machines/equipment or engraved on the items.	All equipment in each lot supplied	NO	Aldai Technical Training Institute	Not later than 18 months from date of contract signing

3. Technical Specifications

The purpose of the Technical Specifications (TS), is to define the technical characteristics of the Goods and Related Services required by the Purchaser. The Purchaser shall prepare the detailed TS take into account that:

- The TS constitute the benchmarks against which the Purchaser will verify the technical responsiveness of Bids and subsequently evaluate the Bids. Therefore, well-defined TS will facilitate preparation of responsive Bids by Bidders, as well as examination, evaluation, and comparison of the Bids by the Purchaser.
- The TS shall require that all goods and materials to be incorporated in the goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided for otherwise in the contract.
- The TS shall make use of best practices. Samples of specifications from successful similar procurements in the same country or sector may provide a sound basis for drafting the TS.
- The Bank encourages the use of metric units.
- Standardizing technical specifications may be advantageous, depending on the complexity of the goods and the repetitiveness of the type of procurement. Technical Specifications should be broad enough to avoid restrictions on workmanship, materials, and equipment commonly used in manufacturing similar kinds of goods.
- Standards for equipment, materials, and workmanship specified in the bidding document shall not be restrictive. Recognized international standards should be specified as much as possible. Reference to brand names, catalogue numbers, or other details that limit any materials or items to a specific manufacturer should be avoided as far as possible. Where unavoidable, such item description should always be followed by the words "or substantially equivalent." When other particular standards or codes of practice are referred to in the TS, whether from the Borrower's or from other eligible countries, a statement should follow other authoritative standards that ensure at least a substantially equal quality, then the standards mentioned in the TS will also be acceptable.

- Reference to brand names and catalogue numbers should be avoided as far as possible; where unavoidable the words "or at least equivalent" shall always follow such references.
- Technical Specifications shall be fully descriptive of the requirements in respect of, but not limited to, the following:
  (a) Standards of materials and workmanship required for the production and manufacturing of the Goods.
  (b) Any sustainable procurement technical requirements shall be clearly specified. Please refer to the Bank's Procurement Framework for further information. The requirements to be specified shall be specific enough to not demand evaluation based on rated criteria/merit point system. The sustainable procurement requirements shall be specified to enable evaluation of such a requirement on a pass/fail basis. To encourage bidders' innovation in addressing sustainable procurement requirements, as long as the bid evaluation criteria specify the mechanism for monetary adjustments for the purpose of bid comparisons, bidders may be invited to offer Goods that exceeds the specified minimum sustainable procurement requirements.
  (c) Detailed tests required (type and number).
  (d) Other additional work and/or Related Services required to achieve full delivery/completion.
  (e) Detailed activities to be performed by the Supplier, and participation of the Purchaser thereon.
  (f) List of detailed functional guarantees covered by the Warranty and the specification of the liquidated damages to be applied in the event that such guarantees are not met.

SUMMARY OF TECHNICAL SPECIFICATIONS

TENDER FOR SUPPLY, DELIVERY, INSTALLATION, CALIBRATION, COMMISSIONING AND TRAINING ON THE USE AND MAINTENANCE FOR MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE

The Goods and Related Services shall comply with following Technical Specifications and Standards:

Item No	Name of Goods or Related Service	Technical Specifications and Standards	Compliance
MEE 1	CNC lathe machine	CNC Lathe with Industrial control, Electrical Control Box, Central Automatic Lubrication System, LM Guides for X & Z Axes, 8 Station Programmable Turret, Flood Coolant System of Capacity 100 Litre, 165mm - 3 Jaw S.C. Chuck • Number of production axis: 2 axis • Programmable turret: 8 position • The machine should be built on grey cast iron base with integrated coolant tank. • It should have an industrial CNC control system • It should feature hydraulic Chuck and manual tailstock, removable chip tray. • It should have an automatic lubrication system and adjustable flood coolant system Chuck Size mm 165 Chuck Type Manual /Hydraulic Maximum turning Diameter mm 200 Maximum turning Length mm 300	

		Bed	type	45 deg Slant bed	
		No. of axes	no	2	
		Swing over way covers / carriage	mm	410	
		Swing over cross slide	mm	160	
		Swing over bed	mm	528	
		Distance between centers	mm	380	
		Height of center from floor		1060	
		Positioning Accuracy	mm	0.01	
		Repeatability	mm	±0.005	
		Spindle nose taper		A2-5	
		Bore through spindle	mm	52	
		Bar stock Dia for Manual chuck		51	
		Bar stock Dia for Pnu / Hyd chuck		38	
		Spindle Bearing Front Inner Dia	mm	80	
		Spindle Bearing Front Outer Dia	mm	125	
		Spindle Bearing Rear Inner Dia	mm	70	
		Spindle Bearing Rear Outer Dia	mm	110	
		Programmable spindle speed	rpm	150 – 6000	
		Control system		SIEMENS	
		Tool cross section		20x20	
		No. of Station	no	10 (BTP 63)	

		Boring bar size(capacity) mm 32 X- axis travel mm 140 Z - axis Travel mm 380 Ball Screw X / Z mm Ø32 x 10 - C3 Class Programmable feed rate mm/min 0-10000 Rapid feed rate mm/min 30000 Axis motor X / Z Type AC SERVO MOTOR Axis motor X / Z Torque Nm Siemens 6 Axis motor X / Z Power kW Siemens 1.74 Slides Linear Motion Guide ways Tailstock base travel mm 190 Tail stroke Quill Stroke mm 100 Quill Diameter mm 80 Tail stroke Taper MT-4 Main supply (±10 %) 415V, 3 Ph., 50 Hz L x W x H mm 2300x1600x1900 Weight (approx) Kgs 2400 **Should be supplied with the following tools:** **Set of 5 external turning carbide tool holders with inserts as described below** Turning & Facing Tool holder no. 1 Copy Turning Tool Holder (LH, RH, N) nos. 3 (each 1no.) Threading Tool Holder no. 1	

		Set of 3 Internal boring carbide tool holders with inserts as described below Boring bars nos. 2 Internal threading no. 1 Centre drill dia shank dia 8mm no. 1 Twist Drill dia 6,8,16 & 12mm nos. 4 (each 1 no.) Should be supplied with windows based software designed to give complete solution for CNC programming (Design, Teach, Write and Simulation). This software acts as a tool which satisfies the need for designing of CAD model, Writing of CNC codes and also executing the simulation of the model. In addition this software also possesses the ability to execute both in online/offline modes. Easy to use design package. This software should have Importing tool which supports Cad packages with DXF or HPGL interface. It should have the following features Simple "Drag and use" tools Onscreen co-ordinates display unit with grid functions Consists of various modes Draw, Edit, Design, CNC Inspect Drawing mode with all basic sketch tools in addition to multifunction tools Multifunction tools such as Pattern tools, Modify tools, Tangential, Scaling tools etc., 2D / 3D representation of geometry's. Window bars with Select Geometry and order geometry values,	

		Built in Tool functions with multipurpose / variant tool selection Navigation tabs available to switch between tabs during creation. The software should feature a special educational module for the basic beginners learning CNC programs covering all the cycles. It should also feature a programming tool for creating part program from basic to advanced levels, offering a user-friendly selection window with list of G and M codes for writing CNC part programs quickly and easily with flexibility to directly enter each word of the CNC block as the code is added to the CNC editor.	
MEE 2	CNC Milling Machine	CNC vertical milling machine designed specifically for industrial specifications. It should be a precision milling machine totally enclosed high visibility sliding guard. It should use industrial controls such as SIEMENS The machine should be provided with widely placed precision LM guide ways for increased rigidity and high accuracy The castings should be internally reinforced with heavy ribs to resist flex and damp vibrations. The machine should be equipped with cartridge type spindle power with 20 tool arm type ATC, integrated base with coolant tank X axis mm 480 y axis mm 360 Z axis mm 500 Table size mm 600 x 350 T- Slot mm 3 x 14 x 100 Load on table Kgs 250	

		Spindle		Direct Drive, Cartridge Type	
		Spindle nose to table top	mm	120 – 620	
		Spindle to Column	mm	410	
		Spindle nose taper		BT 40	
		Spindle motor capacity	Kw	Siemens Continuous Rating 7 Kw / 15 minutes rated output 9Kw	
		Programmable spindle speed	rpm	Siemens 10 – 6000	
		Spindle Bearing Front	mm	Outer Dia: 95mm Inner Dia: 60mm	
		Spindle Bearing Rear	mm	Outer Dia: 95mm Inner Dia: 60mm	
		Control system		SIEMENS 828D Basic SL	
		Progammable feed rate	mm/min	0 - 6000	
		Rapid feed	m/min	40	
		Positioning accuracy	mm	0.010	
		Repeatability	mm	± 0.005	
		Slides		Linear motion guide ways	
		Ball screws	type	32mm & 10mm C3 Class	
		Axis motor		AC SERVO	

		Axis motor capacity	Nm	7	
		Main supply		415V±2% 50 Hz and 15A, 3 Phase (Customer to specify with order)	
		L x W x H with ATC (approx.)	mm	1900 x 2400 x 2550	
		Weight (approx)	Kgs	3000	
		Fully packed L x W x H without ATC (approx.)	mm	1975 x 2475 x 2400	
		Fully packed L x W x H with ATC (approx.)	mm	1975 x 2475 x 2850	
		Weight (approx)	Kgs	3300	
		Capacity	Ltrs	100	
		Coolant motor	Kw	1	
		Lubrication		Automatic lubrication system	
		Compatability / Upgradable		FMS / CIM system	
		Tool shank	type	BT 40	
		No of tool	no	20 tools Arm type	
		Actuation type		Motorized	
		Maximum tool dia	dia	80	
		Maximum tool length	mm	250	
		Max tool weight	Kgs	6	
		Supplied with the following:			

		A) COLLET CHUCK HOLDER RD 16-BT40 COLLET CHUCK HOLDER 2 NOS RD 25-BT40 COLLET CHUCK HOLDER 3 NOS BT40 SHELL END MILL ADAPTOR 16MM 1 NO **B) COLLET** RD 16 COLLETS(2mm to 10mm) 1SET RD 25 COLLETS(4mm to 16mm) 1SET TAP Collet RD16(5x4mm, 6x4.9mm or 6x4.5mm, 8x6.2mm) 1SET TAP Collet RD25(10x8mm, 12x9mm) **C) CUTTER** HSS SHELL END MILL SHANK DIA.40MM, CUTTER WITH DIA.16MM BORE 1 NO **D) DRILL AND TAP** TAPE M5,M6,M8,M10, 1 SET	

		TWIST DRILL DIA. 4.2MM, 5MM, 6.8MM, 8.5MM, 1 SET **E) BORING BAR HOLDER AND INSERT** BORING BAR DIA. 10MM 1 NO BORING BAR INSERT 1 NO **F) SLOT DRILL, END MILL AND BALL NOSE END MILL** HSS SLOT DRILL DIA. 12MM 1 NO HSS END MILL DIA. 12MM 1 NO CHAMPER CUTTER 45DEG 1 NO **G) CENTRE DRILL SHANK DIA. 8MM TIP dIA 2 MM** 1 NO **H)TOOL CLAMPING FIXTURE** 1 NO Should be supplied with windows based software designed to give complete solution for CNC programming (Design, Teach, Write and Simulation). This software acts as a tool which satisfies the need for designing of CAD model, Writing of CNC codes and also executing the simulation of the model. In addition this software also possesses the ability to execute both in online/offline modes.	

		Easy to use design package. This software should have Importing tool which supports Cad packages with DXF or HPGL interface. It should have the following features Simple "Drag and use" tools Onscreen co-ordinates display unit with grid functions Consists of various modes Draw, Edit, Design, CNCInspect Drawing mode with all basic sketch tools in addition to multifunction tools Multifunction tools such as Pattern tools, Modify tools, Tangential, Scaling tools etc., 2D / 3D representation of geometry's. Window bars with Select Geometry and order geometry values, Built in Tool functions with multipurpose / variant tool selection Navigation tabs available to switch between tabs during creation. The software should feature a special educational module for the basic beginners learning CNC programs covering all the cycles. It should also feature a programming tool for creating part program from basic to advanced levels, offering a user-friendly selection window with list of G and M codes for writing CNC part programs quickly and easily with flexibility to directly enter each word of the CNC block as the code is added to the CNC editor.	
MEE 3	Universal Milling Machine	[1] Universal milling machine, type. [2] The frame and base are made of high quality cast iron strong and	

		[3] The machine must be manufactured and must have manufacturer's accuracy test certificate according to ISO or JIS or DIN or BS. [4] Working table min. 1200x280 mm. [5] With min. 3 T-slot and 14 mm. width each approximately. [6] Power motor min. 3.7 Kw./380V./3phase/50Hz. [7] Automatic and manual longitudinal travel min. 880 mm. [8] Automatic and manual vertical travel min. 400 mm. [9] Automatic and manual cross travel min. 250 mm. [10] Complete with automatic feed for all axis by gear. [11] Taper size of vertical spindle ISO40. [12] Taper size of horizontal spindle ISO 40. [13] Swiveling of working table at left/right min. 45 degrees. [14] Swiveling of spindle head at left/right min. 45 degrees. [15] Spindle speed gear type change min. 10 steps or variable speed type. [16] Minimum spindle speed not more than 60 rpm. and maximum spindle speed not less than 1,400 rpm. [17] Machine must be equipped with metric scale. [18] Coolant systems. [19] 1 set of steel clamping kit (not less than 45 pieces). [20] Swiveling machine vise turn 360 degree, clamping width min. 200 mm. [21] 1 set of dividing head (40:1) complete with tail-stock. [22] 1 set of circular table (120:1) 250 mm diameter. [23] 1 set of quick change holder NT40 or ISO40. [24] 1 set of quick change multi-lock milling chuck NT40. [25] 1 set of straight collet chuck 22 mm. diameter complete with collet size 6,8,10,12,16 and 20. [26] 1 set of quick change face mill arbor 25.4 mm. diameter NT40 or ISO40. [27] 1 set of quick change drill chuck arbor NT40 or ISO40.	

		[28] 1 set of face mill diameter 80 mm. and inside diameter 25.4 mm. Can be hold 4 cutting tool not less than 4 pieces with spare carbide tip 10 pieces. [29] 1 set of horizontal milling arbor ISO 40 (O 25.4 mm.) [30] 1 set of splash guard. [31] 1 set of quick change boring system ISO40. [32] 1 set of parallel steel. [33] 1 set of leveling block. [34] 1 set of machine lighting. [35] 1 set of standard service tool. [36] Complete with 3 axis digital readout system and resolution 0.005 mm. [37] 1 set of vibration support.	
MEE 4	Lathe Machine	- Automatic lathe machine Overall maximum dimensions of machine: - Horizontal Spindle; Maximum work diameter 460mm; - Maximum distance between centres680 mm; Maximum work length 710mm; - Speed range of cutter spindle: - 160 to 2500 rpm; - Z acis feed range: 0.315 to 1,7mm/R; - Tailstock taper : T4 - Metric tapping 0.1 mm to 14 mm Accessories: Centers (revolving dead center, a micro-set adjustable dead center, a self-driving live center; Lathe dogs (standard bent tail, straight tail, safety clamp and clamp type; Three Jaw universal geared scroll chuck and a four-jaw independent chuck; Collets: 295 No. ; Fingers: 150 No. Cutting tools: Tool-holders:- Mechanically held carbide tools, Clamped insert lathe tools Left-hand offset, Right-hand offset, straight, carbide; General-purpose lathe tool-bit with various lake angles (-150 to 00 to +350); Cut-off tools, Thread cutting	

		tools. Knurling tools: A set of tapes (three: Fine, medium and coarse). Functions: Turning, cutting-off, internal and external threads cutting and drilling.	
MEE 5	Radial Drilling Machine	- Special CAM operated head clamping - Quill balancing Auto-feed enabled by electromagnetic chuck - Hardened gears for both speed and feed gear box - Drilling Capacity In Steel 63mm,; - Drilling Capacity In Cast 75mm; - Boring Capacity In Steel 100mm; - Min. / Max. distance between spindle & column 350 / 1600 - Radial Arm Swivel 0-360 Degrees; - Number of spindle feeds 6 - Range of Spindle feeds0.09 to 1.20 mm/rev - Range of Spindle speeds 36 to 1796 rpm Supplied with accessories: Drill Holder Brackets, Twist Drills: High speed steel with straight and tapered shanks drills (high helix drill, core drill, oil hole drill, straight-fluted drill, deep hole or gun drill, spade drill, and Step drill, and saw-type hole cutter; Single point boring tool; Center drills regular and bell type; Reamers: rose, carbide-tipped, shell, adjustable and expansion-type reamers; Machine Taps: Gun, Stub flute and spiral flute each type supplied in sets of three; fluteless tap; countersinks; All to be supplied with the respective accessories such as drill jig chucks, guide plate and spacers. Functions for: machining holes and cutting internal thread.	

MEE 6	PowerSaws, Band, Horizontal	- Hyd-Mechanical Automatic Horizontal Band saw, Mdl. S-20A, MTA-100 PLC Digital Programmable Control, Bundling Attachment, Swivel Mitering Work Head, Hydraulic Vises, Coolant; - Blade speed: 2 m/min to 10 m/min; Max work load: 2250 Kg - Capacity: Blade Width: 32 mm; Thickness: 8 mm Band Saw 16"x18";Rect-Cap (W): 18" / 457.2 mm; Rect-Cap (H): 16" / 406.4 mm; Rounds-Cap: 18" / 457.2 mm; Square-Cap: 16" / 406.4 mm; - Power: 7.5 hp / 5.6 kW; 220/440 V AC - Over all Dimensions: (W x D x H): 85" x 116" x 58"; Max. weight: 1800 Kg Functions: For cutting-off of metal plates and rods beam and blooms	
MEE 7	Welding Training Set	[1] A manual welding simulation trainer (educational system) on butt and corner joints for MMAW (Manual Metal Arc Welding), SMAW, FCAW, GTAW TIG, MIG and MAG welding processes. The purpose is to familiarize trainee the basic skills before going to the real practice [2] 1-set each welding heads for practical training on MMAW, MIG, and TIG [3] With monitor screen and Video glasses having High Resolution LCD 640x480. [4] Including thermoprinter with printing paper [5] Faults and defects can be reported through monitor screen and can be printed out [6] Electrical supply: 220 V, 50 Hz, 1 phase [7] With welding helmet set including audio system	

		[8] 2-rolls of printing paper min. [9] Completed with all accessories to be ready for use	
MEE 8	Spot Welding Machine	[1] The resistance welding process in spot welding floor type by foot operated control, minimum capacity 15 KVA. Technical specification [2] Electricity supply AC. 220/380 Volt/3 Phase/50 Hz, fitted with groundage cable. [3] Water cooled. [4] Ability to spot mild steel, galvanized sheet and stainless steel at minimum thickness 1.2 + 1.2 mm. [5] Minimum throat depth 250 mm [6]By mechanism pressing. [7] Adjustable current range not less than 5 ranges or equivalent system [10] Having automatic timing control and magnetic control. [11] Electrode arm has hole for clamping electrode holder in vertical and slope line. [12] Having minimum 3 sets of electrode (Straight, slope and elbow head.) [13] Water receiver for cooling by motor pump, electrical supply 220 Volt single phase 50 Hz. Accessories [14] Tool box with tools 1 set.	
MEE 9	MIG welding machine 250 amp	[1] The constant voltage MIG welding machine, complete with wire feeder unit and switch controlling flowing of	

		shielding gas. Consist of moving parts which convenient and safety as welding. Technical specification [2] Maximum welding current not less than 240 Amp. [3] Minimum 100% duty cycle at 180 Amp. [4] Electricity supply AC. 220/380 Volt 3 phase 50 Hz. [5] Consist of spot welding accessories. [6] Having gas flow solenoid valve. [7] Built in ON-OFF switch. [8] Double wire feeder for aluminium wire, diameter 0.8-1.2 mm. [9] Welding gun 300 Amp., air-cooled and complete fitted with ON-OFF switch as semi-automatic or automatic at holder, 3 metre air-cooled hose assembly with swaged welding gun. Accessories [10] Having carriage for all parts with a bracket for CO2, Argon cylinder on solid rubber wheels.1 set. [11] Return cable made of multi stranded high grade copper cross section 50 mm2 as AS, BS, VDE standard (quantity of copper wire 1,558/0.2 pieces) complete with brass ground clamp, 300 Amp min. length 5 metre 1 piece. [12] Having 3 core rubble-sheathed flexible primary cable, cross section 6 mm2, 4 metre long. [13] Included CO2 cylinder minimum flow rate 0-30 litre/min. with heater 1 set. [14] Having guide conduit for steel welding and aluminum welding 1 set of each. [15] Welder's hand shield and helmet made of super tuff nylon, complete with clear and filter glass. 1 set. [16] Steel wire reel diameter 0.8 mm. capacity 15 Kg. 1 pack. [17] Aluminum wire reel diameter 1.2 mm. capacity 1 pack. [18] Welder's apron and arm protection 1 set.	

		[19] Contact tip diameter 0.8, 0.9, 1.0, 1.2 mm., 5 of each. [20] Welding gloves for MIG (gauntlet) 1 pair. [21] Stainless wire brush. 2 pieces. [22] Spray torch cleaner 2 sets. [23] Stainless wire reel diameter 0.8 mm. 1 reel. [24] Spirally wound wire guide for steel and aluminum 1 set of each.	
MEE 10	TIG welding machine 250 amp	[1] AC/DC TIG welding machine thyrister control or Electronic control. Especially designed for TIG welding, having gas shield control and water cooling in welding gun, fitted with solid rubber wheels which conveniently move and safety. Complete with welding accessories. Technical specification [2] Maximum welding current not less than 250 Amp. [3] Minimum duty cycle 40% at 250 Amp. [4] Electricity supply AC 220/380 Volt 50 Hz. [5] Open circuit voltage minimum 70 Volt. [6] Consist of power factor correction. [7] Current adjusting by continuous current control or 2 ranges continuous current control. Average lowest and highest current 10-250 Amp. [8] Having solenoid valve for gas or water, or other accessories that can be insteaded efficiently. [9] Having pre flow time or post flow time of gas flow rate. Accessories [10] Consist of mobile on solid rubber wheels and gas cylinder rack with securing chain. [11] Fitted with water cooled and on-off switch in electrode holder which ready to use. Minimum cable length 3 metre. [12] Having waterproof on-off and amperage control pendant include cable	

		[13] The return cable is made of multi stranded high grade copper core, minimum cross section 50 mm2 as AS, BS, VDE standard (copper wire about 1558/0.2 pieces) complete with cable eye and ground clamp made of bronze, minimum 5 metre long. [14] With cable 4 metre, 3 core, 6 mm2 connected to primary pole. [15] Complete with ceramic nozzle size 6.35, 9.5, 12.7 mm. 4 pieces of each. [16] Having tungsten electrode consist of [17] Pure tungsten size 1.5, 2.4, 3.2 mm. 4 pieces of each. [18] Thoriated tungsten size 1.5, 2.4, 3.2 mm. 4 pieces of each. [19] Having tungsten electrode chuck size 1.5, 2.4, 3.2. 2 sets of each. [20] Argon gas cylinder 40 litre which full filled. [21] Argon regulator flow meter 1 set. [22] Welder's helmet made of supper tuff nylon and also welder's handshield, complete with filter glass, spare glass No.11. 10 pieces. [23] Set of apron and arm and wrist protection, 1 set of each. [24] Welding gloves for TIG (gaunlet gloves) 2 pairs. [25] Stainless wire brush. Other details [26] Consist of circulation water pump and storage tank which connected to TIG welding 1 set and also on-off switch fitted. capacity 15 litre	
MEE 11	Gas metal arc welding (GMAW),	- Wire feeders with feed rates range: 2 to 30.5 m/min; - Shielding gases: Argon, Helium, nitrogen, CO2, H2 or their mixture,	

	/metal inert gas (MIG) welding / metal active gas (MAG) welding	- Supply415 ± 10%; Phase:3; Torch Frequency: 50 Hz; - Load: 9.5 KVA; OCV (DC): 22-46 V; - Output (Min./Max.) 60/250 A; Output Steps: 16; Control Circuit – 24V; Torch AK-25P; - Input Voltage: 230VAC @ 20 Amps - Output Power: 30-160 Amps - Duty-Cycle: 130 Amps @ 30% - Wire Sizes: .023"-.045" / 4" or 8" Diameter Spools - Flux Cored - Mild Steel – Aluminum - Max. Dimensions: 10.8" W x 18.5" D x 14.0" H - Motor: Permanent Magnet; Connector: PM-3; - Weight: 143 Kg Accessories: MB15A industrial style MIG gun with connect cable assembly, HD-work clamp w/ 10' welding cable, brass gas regulator & hose, mild steel and flux core welding wire and complete operator instruction manual. Function: Capable of welding mild steel from 24GA to 1/4" with .023" - .045" diamater wire. For precision welding of all types of steels	
MEE 12	Universal Testing Machine	- Maximum load 100 KN. - Manually operated - Tensile Test clearance up to at least 700 mm - Ram Stroke: 100mm; - Straining/piston speed at load - Dimensions: 2030 x 750 x 1960 - Instrumentation for digital measurements of load. Digital extension readant to be available. - Hydraulic Loading and Hydraulic Control Console - Electronic Interface. - Configured for Tensile, Compression Transverse, shear - Variety of Graphs and Report printing.	

		- Hydraulic Power Pack - Flow Control Valves to smoothly control the rate of loading. - Moving machine table which with hydraulic ram - Chain and sprocket mechanism with geared motor to control movement of middle crosshead - Upper Crosshead connected to machine table through plane columns. - Main screws for adjusting and controlling position of middle crosshead.	
MEE 13	TorsionTesting Machine	- Torque capacity 60 Nm. - Direct reading of torque and strain on dial indicator. Torsion Testing Machine designed for checking - Torsional property of steel samples - Possibility to adjust torque ranges - Power Supply: Three phase, 415V - Allows the application of torsional loading (torque) to a model section and display the corresponding angle of twist of the test specimen of different materials	
MEE 14	Ultrasonic Flaw Detector	This unit has a variable square wave pulser to optimise the performance of transducers. Probe sensitivity is increased by pulse width variation. [1] Bench mounted unit. [2] Bright electro-luminescent display. [3] Frequency range 5 bands 1MHz to 35 MHz. [4] Test modes pulse echo and transmit/receive. [5] Update rate 60Hz. [6] 5 Measurement modes. [7] Selectable damping. [8] Continuously variable probe zero. [9] Test range 1 to 20000mm at steel velocity.	

		[10] Gain 0 to 110dB. [11] Panel memory 20 stored calibrations. [12] Thickness logging 2000 storage readings. [13] RS232 interface. [14] Battery operation/Mains operation power pack. [15] Transducer sockets BNC or LEMO. [16] Aluminum Carry case. [17] Operating temperature-10 to 55 degree C. Transducer [18] 4.3 MHz crystal single angle medium damped. [19] 2.25 MHz crystal single angle medium damped. [20] 5 MHz 2 x 8 x 4 crystal twin contact medium damped. [21] 2.25 MHz 2 x 8 x 4 crystal twin contact medium damped. [22] 1.25 MHz 2 x 8 x 4 crystal twin contact medium damped. [23] 10 MHz 10mm dia. crystal single contact medium damped. [24] 2,25 MHz 10mm dia. crystal single contact high damped. [25] 5 MHz 10mm dia. crystal single contact high damped. [26] Single probe cable 2 metres. [27] Twin probe cable 2 metres. [28] Printer cable. [29] PC cable. [30] Calibration block welding. [31] Storage and recall software	
MEE 15	Auto Collimator	Electronic Autocollimator for Measurement of straightness, flatness, squareness of machine tables, cast iron and granite surface plates / tables. High accuracy and stability over a range of applications. Digital autocollimator controlled using a tablet PC with clear touch-screen software. Should come with a laser sighting aid.	

		Should include specific applications software which allows advanced measurement, calculation and analysis of straightness, squareness, parallelism, flatness. Measurement range of around 1800 seconds Simultaneous dual axis operation and display Resolution: 0.2 arc sec	
MEE 16	Universal Profile Projector	- Magnifications : 10X, 25X & 50X - Capacity : Linear : 0 - 25 mm, Angular : 0 - 3600 - Resolution : Linear : 0.001mm, Angular : 1 min of arc Functions - Inspection of profiles, templates, precision measurement of length and angle.	
MEE 17	Angle Dekkor	- Angle dekkor having a two axis graticule - Micro optic and manual operated - Should be provided with darkfield graticule - Allows to have a clear image from low reflectivity surfaces and from surfaces as small as 3mm. - Direct Reading to 60 secs over a measuring range of 60 x 60 mins using eyepiece graticule (supplied wiht mounting base)	
MEE 18	Desk Top Computers	- 2.66 GHZ 1500 GB S-ATA 300, 8 GB RAM DDR3, - 650GB Hard Disk, ATI OR NVIDIA Graphics, - 17" Screen, Card HDMI/DVI/VGA Graphic Output FiberOptic Digital Audio Output, 5.1 ChannelSound, DVD Writer, Card Reader WithlicensedWindow Vista orWindow XP,	

MEE 19	Auto-CAD and Anti-virus software	Latest version with group license for the fortysix (46) computers and three laptops	
MEE 20	Plotters	- Digital, - PrintSize: 210mm to 1189mmx 3810mm - PrintTechnology: DyeBasedImaging and PigmentBased UV with HP ThermalInk - PrintSpeed: Normal Quality: 4.2 m2/Hr at 300 DPI; BestQuality: 2.8 m2/Hr at 600 DPI - Resolution: 600 x 600 - Networking: 10/100 BaseTInternalPrint Server - Memory: 12 MB Standard (expandableto 68 MB) 64 MB RIP In EFI Box - PaperHandling: Media Types: Paper (coated, glossy), film (coated, glossy, backlitimaging), banners withTyvek, opaque vinyl. Media Handling: Sheet and Roll Feed, Take Up Reel. DocumentFinishing: AutomaticCutter. PaperHandlingAccessories: Media Spindle - Misc. Features: Generate 31 squarefeet/hour in high-speed "Best/Photo" mode and 47 squarefeet/hour in high-speed "Normal/Productivity" mode. Twoink sets - dye-basedinksforhigh-speedphoto-qualityimages, pigmented UV inksforenhanced light-fastness. Fiery RIP 64 MB standard memory - Dimensions: 1100mm x 1500mm x 2800mm - Weight: Unit: 110 kg	
MEE 21	Printers Heavy Duty	- Digital, Fast, Easy-To-Use Wide-Format A3 Colour Laser PrinterFor Office Work-groups - Speed : Up to 27/28 ppm ltr/A4, full-colour&black-only First Page Out : Under 16 seconds - Resolution : 600 x 600 dpi with HP ImageREt 3600	

		- Processor : 533 MHz RISC - Memory (std/max): 160MB/544 MB - I/FACE : Bi-di parallelport, USB 1.1 port - Trays (in) : 1 x 100-sheet multipurposetray, 1 x 500-sheet tray - Trays (out) : 250-sheet face-down output bin - DutyCycle : 120,000 pages/month - Media Types : Plain, light, intermediate, heavy, extra heavy, glossy, heavy glossy, highglossimages, tough, recycled, envelopes, transparencies, labels, cardstock - PostScript PrinterDescription, native PDF printing FONTS : 80 intscalablefonts in PCL, 92 intscalablefonts in PostScript - OS : MS Win 98, Me, NT, 2000, XP, & Server 2003 (32 bit and 64 bit); Macintosh OS 9 and later - Size (LXWXH) : 577 x 704 x 640 mm; - Weight : 50 kg	
MEE 22	Light CrystalDisplay (LCD)/ Projector	- Anexcellentmultipurposewidescreen 1280x800 data projector, display standard XGA and HD 720p video in nativemode; - Maximum light rating2600 lumen; - Varied set of input connectorsincluding a digital DVI-I with HDCP - Fan noisefrom 35 to 29 dB; - ImageSize and Position: The 1.2x manual zoom lensis of averagelength. Itdelivers a 100" diagonal 16:10 imagefrom a throwdistance of 10.75 to 13 feet. - Can be elevatedbydropping and lockingthe single frontfoot, and therightrearfoot can be adjustedif horizontal leveling (with ±30° of keystonecorrection) - Connections: The LV-8215 can accommodateeithertwoanalog data signals, orone	

		digital and oneanalogsignal, viaits single VGA and DVI-I (HDCP) connectors. - Both RS-232 and RJ-45 connectionsforsecuritymonitoring and networking. - Compatibility. Can connect a widerange of data and video sourcesfrom VGA to UXGA and from 480p to 1080i, and can use the Auto settingtoselecttheaspect ratio fortheimageormanually set itwithone of fivechoices: 4:3, 16:9, 15:9, 16:10, and Letterbox. - Blackboardmodes. NinePresetmodesthatchangebrightness and image color emphasis (six color temperaturechoices). - Remote Control and Menus - Audio facility: A 7-watt speaker islocatedontherightside of theprojectorwithvolumeadjustedeasilyfromtheremote control. - LampLife: In normal mode, lamplifeisrated at a longerthanaverage 4,000 hours, and Eco mode can stretchthatto 5,000 hours. - Weight of 4.5Kg	
MEE 23	Software for all computers	- Drawing software for 100 computers - SOLIDWORKS group license	
MEE 24	Work Done by a Variable Force Apparatus	[1] Determines the work done by a vertical variable effort and compares it with the work done in lifting a load [2] The free-standing, bench-top unit consists of a suspension cord carrying a loaded trolley at its mid-span. The cord is clamped at one end, and tensioning effort applied vertically at the other end. [3] All pulleys feature ball bearings. [4] An instruction manual for student and lecturer provided. [5] Set of weights.	

		[6] 1m ruler supplied [7] Dimensions and weights (excluding set of weights): 585 x 130 x 635 mm; 3.2 kg (approx)	
MEE 25	GearTrainsApparatus	[1] Apparatus for assembling four spur gears in simple or compound BC01/6 Item Code Item Description / Specifications trains to find overall ratios [2] An additional rotating arm for simple epicyclic gearing [3] 40, 60, 80 and 100 tooth gears supplied [4] Self-contained bench mounted unit [5] Base fitted with drawer to hold all gears, spacers and pins [6] An Instruction manual for student and lecturer provided. [7] Dimensions and Weights: 290 x 125 x 120 mm; 2.2 kg (approx)	
MEE 26	Crank and Connection Rod	[1] Self-contained unit mounted on an A3 white melamine board. [2] The characteristics of the crank and correcting rod are clearly shown by its parts. [3] The principle component parts are made from amber coloured perspex, pivoted with hollow rivets. [4] Includes a manual for student and lecturer which provides applications of the mechanism and illustrates graphical constructions. [5] Dimensions and Weights: 480 x 350 x 30 mm; 1 kg (approx)	

MEE 27	Togglewith Single and DoubleAction	Self-contained unit to enable evaluation of forces within a toggle mechanism. The characteristics of the toggle with single and double action are clearly shown by its parts. Should consist of two pairs of links to which load is applied by a hanger suspended from their connecting pivot. The horizontal reaction is measured by a spring balance. Provided with instruction sheet which explains the use of velocity diagrams to static problems by virtual motion. Provided with set of weights and 1m ruler	
MEE 28	Cam and Follower Apparatus	To determine follower displacement against angular rotation of acam; hence derive velocity and acceleration diagrams and determinethe maximum acceleration of the follower; for a variety of cams andfollowers. Bench mounted unit consisting of main spindle for each cam and a dial gauge. Each cam is mounted on a central shaft and is free to rotate about this shaft. The cams are rotated by hand. The angular position of the cam is shown on a protractor and a pointer, It allows the cams position through rotation to be recorded. A set of cams are supplied as standard along with a set of followers which run on the perimeter of each cam. Each cam can be easily changed and the angular and dial gauge readings are clear. Consists of: - Simple Harmonic Motion Cam, Uniform Motion Cam, Constant Acceleration Cam, Tangent Cam, Eccentric Cam - roller and knife-edge	

		- Dial gauge: 25mm range, 0.01mm resolution 60mm diameter reading face. - Angular protractor scale with 360° range and 1° resolution Supplied with instruction manual for instructor and student, and all necessary assembly and operational tools for full operation	
MEE 29	Flywheel Apparatus	[1] Self contained. [2] Wall mounting includes a pointer to the periphery of the wheel [3] To demonstrate the Second law of motion and energy storage [4] Running in ball bearings. [5] A load hanger and cord supplied. [6] 250mm x 30mm steel flywheel with engraved line on periphery [7] Instruction manual for student and lecturer provided. [8] Stop watch supplied [9] Set of weights. [10] Dimensions and Weight (excluding set of weights): 215 x 280 x 250 mm ; 19 kg (approx)	
MEE 30	Wall Mounted Screw Jack	Bench-mounted apparatus base incorporating a turntable fitted with a metric square pitch screw jack thread. Supplied with a set of calibrated weights suspended from the load hanger Ø140mm turntable 20mm outside diameter thread 2.5mm thread pitch An instruction manual for student and lecturer is provided. Set of weights	

MEE 31	Mechanics / Machine Friction of Belts Apparatus	[1] Observes the relationship between the tensions in the two sides of a belt; assessess the differences between vee, rope and flat belts; determines coefficient of friction between pulley and the three belt sections; investigate the effect of angle of lap. [2] The wall mounted apparatus consists of a pulley, 3 belts and 2 load hangers. Pulley graduated in 15 degree intervals. [3] The aluminium alloy pulley of approx. 150mm diameter has machined grooves to suit the three belts. [4] The three belts are vee, rope and flat. [5] An Instruction manual for student and lecturer supplied. [6] Set of weights. [7] Dimensions and Weight (excluding set of weights): 230 x 150 x 280 mm, 10 kg (approx)	
MEE 32	Rope – BeltFrictionApparatus	[1] Determination of the coefficient of friction between a steel pulley and a cotton rope; investigate belt tensions; evaluate effects of different `V` angles in the pulley, and of different lap angles. [2] The wall mounted apparatus consists of a fixed pulley, a second interchangeable pulley and a loaded rope belt with 2 load hangers in a complete loop.	

		[3] Four pulleys with vee grooves typically of 60, 90, 120 degrees and flat rim supplied. [4] Alternative mounting positions provided to vary the lap angle. [5] An Instruction manual for student and lecturer provided. [6] Set of weights. [7] Dimensions and Weight (excluding set of weights): 250 x 150 x 370 mm, 19 kg (approx)	
MEE 33	Viscosity Measurement Apparatus	Apparatus to measure viscosity of oil Measuring range: 20 to 600.000 cP Speed : up to 60 rpm Precision: ±1%. Repeatability: 0.2%. Temperature range:- from 0 °C to 100 °C Power: max. 15W Supplied complete with: Set of spindles and Temperature probe	
MEE 34	ConditionMonitoringEquipment	Apparatus designed to determine the friction torque in a plain journal bearing It consists of a steel shaft driven by a variable speed electric motor. The apparatus should allow to measure the temperature in the journal housing. The apparatus allows measurement of Friction torque by adding weights to a load hanger suspended from the damped torque arm. Allows the application of a steady load to the bearing of up to 650N.	

		It is supplied with an electronic tachometer is provided for measurement of the shaft speed, which can be controlled using the control potentiometer on the front control box. A full set of weights, hangers and tools is provided along with a comprehensive instruction manual for student and linstructor.	
MEE 35	Set of MEASURING TOOLS	**Dial Caliper** [1] With metric graduations [2] For inside, outside & depth measuring [3] Knife edge jaws, 38 mm dia. dial [4] Measuring faces, hardened and ground, rust resistant finish [5] Complete in fitted case [6] Measuring range: 0 to 150mm [7] Dial graduations: 0.02mm **Engineers Square** 1] Workshop grade [2] Blades to be hardened, tempered and precision ground [3] Blade length: 100 mm approx **Ext. Micrometer** 1] Metric graduation [2] Hardened & ground alloy spindle, with locknut [3] Ratchet or friction thimble [4] Rust resistant finish [5] Supplied in fitted case [6] Approx. Sizes (one of each): 0 to 25 mm, 25 to 50 mm, 50 to 75 mm, 75 to 100mm [7] Graduations 0.01 mm **Measuring Tape** [1] Flexible steel blade, steel case rust resistant finish	

		[2] Calibrated in metric and inches [3] Length: 3 metres **Scribber** [1] Single ended [2] Approximate length: 180mm **Steel Rule** [1] Stainless steel, non rusting [2] Calibrated in metric & inches [3] Length 300mm	
MEE 36	Vernier Caliper	[1] Knife edge jaws [2] Measuring faces hardened & ground [3] Rust resistant finish [4] Supplied in fitted case [5] Capacity: 0 to 150 mm [6] Graduated to: 0.05 mm	
MEE 37	Vernier HT. Gauge	[1] Metric & Inch graduations [2] Base, beam, sliding head & scriber hardened and lapped [3] Fitted with Locknut & fine adjusting screw [4] Anti-glare rust resistant finish [5] Flush fitting vernier [6] Complete in fitted case [7] Capacity from zero: 300mm x 0.2mm & 0.001 inch	
MEE 38	Measuring Tools Set	[1] Measuring equipment to be used for machining shop works. [2] Measuring tools set must be manufactured and meet accuracy according to ISO or JIS or DIN standard. [3] 10 PCS., VERNIER CALIPER: - 6 inch. / 150 mm. size - Accuracy of 1/128 inch. and 0.05 mm.	

		- Used to measure outside/inside and depth dimensions. - Scale type with lock screw. - Made of stainless steel. [4] 10 PCS., VERNIER CALIPER: - 6 inch. / 150 mm. size - Accuracy 0.001 inch. and 0.02 mm. - Used to measure outside/inside and depth dimensions. - Scale type with lock screw. - Made of stainless steel. [5] 2 SETS, DIAL VERNIER CALIPER: - 150 mm. size - Reading at dial with accuracy of 0.01 mm. A01B/26 [6] 2 SETS, DIGITAL VERNIER CALIPER: - 150 mm. size - Reading through LCD with accuracy of 0.01 mm. and 0.0005 inch. - Inch. or mm. measuring can be selectable [7] 1 SET, DIGITAL VERNIER CALIPER: - 300 mm. size. - Reading through LCD with accuracy 0.01 mm. and 0.0005 inch. - Inch. or mm. measuring can be selectable. [8] 5 SETS, OUTSIDE MICROMETER: - 0-25 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips - Ratchet stop type or friction drive type. - Lockable at any position. [9] 5 SETS, OUTSIDE MICROMETER: - 25-50 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type.	

		- Lockable at any position. [10] 5 SETS, OUTSIDE MICROMETER: - 50-75 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Lockable at any position. [11] 5 SETS, OUTSIDE MICROMETER: - 75-100 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Measuring error _0.003 mm. - Lockable at any position. [12] 1 SET, INSIDE MICROMETER: - 25-50 mm. size with accuracy of 0.01 mm. - High-grade steel measuring face - Ratchet stop type or friction drive type. - Lockable at any position [13] 1 SET, DEPTH MICROMETER: - 0-150 mm. size with accuracy of 0.01 mm. - Measuring spindle is harden and ground. - Base size is min. 100 mm. - Ratchet stop type or friction drive type. [14] 1 SET, UNIVERSAL BEVEL PROTECTOR: - A complete set of Universal Bevel Protector. - Protector head with magnifier lens, 12" blade. - Graduation 1° Dial, 5 min. Vernier. - Hardened stainless steel. [15] 10 SETS, SCREW PITCH GAUGE: - Set of metric screw pitch gauge size 0.4-0.7 mm. min. 21 pcs./set - Unified screw pitch gauge size 4-12 TPI min. 42 pcs./set and can be	

		lockable. [16] 10 SETS, RADIUS GAUGE - Size 0.5-13 mm. (0.5 mm. stepped) - Furnished with 15 pcs./set. [17] 1 SET, COMBINATION SQUARE: - Blades size 300 mm. - Square head 45° and 90° - Complete with center head and protractor head - Scale graduation 0.5 mm, 1 mm. [18] 1 SET, MORSE TAPER GAUGE: - Size of MT1, MT2, MT3 (Outside and Inside) [19] 1 SETt, GAUGE BLOCK - Made of steel alloy - Metric system, 32 pcs./set, quality grade zero, including certification. - Including with maintenance kit set [20] 1 SET, SINE BAR: - Size 150 mm. [21] 1 TOOL CABINETS - Steel cabinet size (approx) WxDxH = 90x45x75 cm. with 2 sliding glass door standard	
MEE 39	Misc. Hand Tools	Basic Hand Tools Set BIHEXAGON SOCKET SET [1] 26 pieces - metric sockets: 8,9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33 and 36 mm. [2] Hex bit sockets: 4, 5, 6, 7, 8, 10, 12, 14, 17 and 19 mm. [3] Philips sockets: 2, 3 and 4. [4] Spark plug sockets: M14 and M10.	

		[5] Chrome molybdenum screwdriver bits: 9 and 14 chemically blacked. [6] Accessories: - Extension bars: 75, 125, 250 mm. - Universal-joint. - T-handle. - Swivel handle and black rubber ratchet handle. [7] Robust fitted case with magnetic parts tray, security padlock and cushion grip handle. SCREW DRIVER SET [8] Handle material is exceptionally resistant to hydrocarbon and other oils. [9] Flanged tang molded inside handle. [10] Chrome plated vanadium steel. [11] Short blasted tip. [12] Tray or container. [13] Flared and parallel tips each of: No. Blade BladeBlade (piece) width thickness length (mm) (mm) (mm) 2 5.5 2 100 2 6.5 1.2 125 2 6.5 1.2 150 3 8.0 1.2 150 3 8.0 1.6 200 3 10.0 1.6 200 3 12.0 2.0 250 [14] Philips or pozidrive tips: No. Trip No. Blade Blade	

		(piece) diameter length (mm) (mm) 2 PZ1 5.0 30 2 PZ2 6.0 30 2 PZ0 4.0 75 2 PZ1 5.0 75 2 PZ1 5.0 100 3 PZ2 6.0 125 3 PZ3 8.0 150 3 PZ4 9.9 200 * PZ = ISO code 2,380 and 4,757 [15] 3/8" square drive insert bit set (17 pieces) - It is a bit adapter set and can be used with socket accessories or torque wrenches. - House or container made of steel box and bits fitted with a form or plastic insert. - Bit set consists of: - Universal bit adapter. - Spinner handle. - 4 metrics hexagon bits, 3, 4, 5, 6 mm. - 5 A/F hexagon bits 3/32, 1/8, 5/32, 3/16, _ inches. - 3 long reach slotted screw insert bits 3, 4, 5.5 mm. - Container or box with cover. INSULTATED PLIERS SET [16] They are for electricians used. [17] High quality steel in good forging. [18] Hot forged for strength and durability. [19] Smooth action. [20] Anti-slip moulding handle. [21] Insulated handle.	

		[22] Pliers set are supplied the same brand consisting of: - 5 multi-grip plier jaw or channel lock pliers. - 240 mm. long max. jaw opening more 45 mm. - Slip joint with more than 6 positions. - 5 combination pliers. - Serrated jaw with cutting edge. - Max. wire cutting 1.6 mm. - 180 mm. long. - 5 snipe nose pliers or long nose pliers. - Taper straight nose with serrated jaw and side cutter. - Max. wire cutting 1.6 mm. - 200 mm. long. - 5 diagonal cutter pliers or side cutter pliers. - Fine sharpened for cutting copper wire. - Max. wire cutting 1.6 mm. - 160 mm. long. - 5 wire stripper pliers. - Spring release. - Adjustable screw with lock nut for repetition work. - Strip wire cap. 0.5 - 6 mm. - 160 mm. long. - 5 end cutter pliers. - Finely sharpened for cutting copper wire. - Max. wire 1.6 mm. - 160 mm. long (approx.). - Cantilever tool box. - 3 tier construction. - Double handle closing 5 compartments. HAMMER TOOL SET Steel Hammer [23] Drop forging hammer processing. [24] Wooden or fiberglass handles.	

		[25] Hammer head fixing (wooden handle). [26] 1-ball pein hammer size 4 Oz. 270 mm. long 65 head width 18 head thick. [27] 1-ball pein hammer size 16 Oz. 350 mm. long 100 head width 29 head thick. [28] 1-joiners warrington hammer No.0 size 8 Oz. 270 mm. long 105 head width 25 head thick. [29] Steel claw hammer (for nailing) size 16 Oz. 320 mm. long 130 head width 32 head thick. [30] Club hammer size 4 lbs. 240 mm. long 100 head width 42 head thick. Soft Face Hammer [31] 1-Copper/Copper hammer size 32 Oz. hammer No.1 face dia. 32, 280 mm. long. [32] 1-Nylon soft face hammer size 24 Oz. face dia. 38, length 300 mm. [33] 1-Rubber mallet size 24 Oz. head size 74x127 mm, length 380 mm. Cold chisels [34] 2-cold chisels blade width 10 mm. length 150 mm. [35] 2-cold chisels blade width 16 mm. length 200 mm. [36] 1-pinch bars blade width 25 mm. length 450 mm. Punches [37] 2-center punches trip O 6 mm. length 150 mm.	

		[38] 2-taper punches trip O 6 mm. length 150 mm. [39] 2-automatic center punch - Pushing the end cap cause a spring to release for impact action. - Impact is adjusted by rotation of the knurl. - Trip O 6 mm. length 140 mm. [40] Hacksaw 2 sets. - Light weight construction resistant to oxidising. - Unique design giving increased blade tension. - Front hand rest. - Hand guard protection. - Die cast Aluminum handle and square section frame. - Cantilever blade adjustment. - Blade length 300 mm. standard size. - 24 blades for 18 TPI (Teeth per Inch) HSS. - 24 blades for 24 TPI HSS. [41] Files with handles. - 2-half round files 200 mm. long. - 2-round files 200 mm. long. - 2-flat files (corse) 200 mm. long. - 2-flat files (fine) 200 mm. long. - 2-square files 200 mm. long. [42] Pullers They are suitable for moving gears bearings sprockets and pulleys which be strong gripping and made of drop forged from high quality steel and heat treated. - Twin and tripple leg pullers. - Internal and external used. - 1-twin leg puller spread 150 mm. reach 80 mm. - 1-twin + triple leg spread 200 mm. reach 140 mm.	

		- 1-bearing puller kit. - Bearing separators fit behind bearing where puller jaw cannot enter. - All kits supplied in a metal case. - kit content: - Bearing separator 35 - 140 mm. capacity used with 2-leg puller. - Beam, screw, thrust nut and thrust race. - Main rods, nuts and washers (2). - 125 mm. extension rods (2) - Extension rods (4) - Separated. [43] Lock grip plier. It is serrated curved jaws with power full locking mechanism and quick release lever and froged jaws are harded, high quality housing. - 2-curves jaw lock grip pliers 190 mm. length 42 mm. jaw capacity. - 2-curves jaw lock grip pliers 235 mm. length 63 mm. jaw capacity. - 2-straight jaw lock grip pliers 190 mm. long 42 mm. jaw capacity 235 mm. long 63 mm. jaw capacity. [44] 6 wires crimpers. - Color coded crimping. - Screw shear cuts terminal screw. - Crimp ignition wire cutter. - General purpose wire cutter. - Wire stripping range 0.70 to 6 mm. O wire. - Rubber insulated handle.	

		[45] A 5-drawer roller cabinet. - Heavy duty plate side handles. - Ball bearing slides. - 5-drawers with sliding rail with key. - Drawer dimension width depth height (mm.) (mm.) (mm.) - 2 drawers (with 580 410 52 9 compartments) - 2 drawers 580 410 100 - 1 drawer 580 410 160 - 2 swivels and 2 fixed castors dia. 125 mm. - Top can be mounted to form 25 mm. deep tray reversed to provide a smooth for work table.	
MEE 40	AnvilWith Stand	[1] Function: for use in workshop [2] All steel construction, heavy cast iron stand [3] 600mm length [4] 300mm overall width of base [5] Weight 50kg approx.	
MEE 41	Figure Stamp Set	[1] Function: for use in workshop [2] Figures 0 to 9 height 5mm [3] In plastic or sheet metal box	
MEE 42	Bench Vice	[1] Drop forged steel [2] Width of Jaw 120mm [3] Opening 140mm, quick release [4] One pair detachable Copper or lead grips [5] One pair detachable fibre grip	

MEE 43	Pipe Wrench	[1] Function: for use in workshop [2] Drop forged steel [3] Crescent type, heavy duty [4] Steel handle with spring & adjusting nut [5] For nuts up to 2 inches	
MEE 44	Open EndedWrench Set	[1] Function: for use in workshop [2] Metric graduation [3] Regular head 15 deg angle jaw [4] Set of 8, sizes 8 to 27mm [5] Made in chrome vandium steel	
MEE 45	Vice GripPliers	[1] Function: for use in workshop [2] Forged alloy steel jaw [3] Pressed steel body [4] Rust resistant finish [5] Lock & quick release lever [6] Approx 175mm Length [7] Capacity 32mm	
MEE 46	Screwdrivers	[1] Function: for use in workshop [2] Set of 4 chrome vanadium steel [3] Hammer proof plastic handles [4] Approx mm sizes - 3x70 length 140mm - 4x90 length 160mm - 6x130 length 220mm - 8x170 length 320mm	
MEE 47	Hacksaw	[1] Function: for use in workshop [2] Adjustable tubular metal frame [3] Shaped handle, blade 250-300mm	

		[4] With qty 50, 18 TPI spare blades	
MEE 48	Tool Box	[1] Function: for use in workshop [2] Steel type, with two trays [3] Handles & locking catch for pad lock. [4] Approx size: 175x200x500mm	
MEE 49	BlowLamp	[1] Function: for use in workshop [2] Fuel: petrol or paraffin [3] Capacity 0.75 to 1 litre [4] Fitted with evercool handle [5] Saftey devices [6] Automatic cleaning needle	
MEE 50	SolderingIron	[1] Function: for use in workshop [2] Copper, non electric [3] Straight with diamond tip [4] Wooden handle, weight 450gr.	
MEE 51	Punch &Chisel Set	[1] Function: for use in workshop [2] 12 piece set [3] In wooden or metal holder [4] Approx Specification: - 1/4 inch cape chisel - 5/16" cape chisel round nose - 3/8" diamond point chisel - 1/4" cold chisel - center punch - solid punch - drift punch - 5/8" cold chisel - 1/8" pin punch	

		- 5/32" pin punch	
MEE 52	Tap& Die Set, Metric Small	[1] Function: for use in workshop [2] HSS set of 7, circular split pattern [3] To contain taper, 2nd, & bottoming taps, dies, die stocks & tap wrenches [4] Supplied with fitted case [5] Metric sizes: 6, 7, 8, 9, 10, 11 & 12mm	
MEE 53	Tap& Die Set, MetricLarge	[1] Function: for use in workshop [2] HSS, Set of 6, circular split pattern [3] To contain taper, 2nd, & bottoming taps, dies, diestocks & tap wrenches [4] Supplied in fitted case [5] Metric sizes: 14, 16, 18, 20, 22 & 24mm	
MEE 54	Tap& Die Set, Bsw	[1] Function: for use in workshop [2] HSS, set of 7, circular split pattern [3]To contain taper, 2nd & bottoming taps, dies, diestocks & tap wrenches [4] Supplied in fitted case [5] BSW sizes: 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4 inch BSW	
MEE 55	WingDivider	Wing Divider [1] Function: For Use In Workshop [2] With Wing & Locking Screw [3] Fine Polished [4] Box Jointed [5] Suitable For All Metal Work	

		[6] Mee – 63200mm Long	
MEE 56	Protractor	[1] Function: for use in workshop [2]85mm diameter made of steel [3] Graduated to 180 deg in both directions	
MEE 57	Universal Surface Gauge	[1] Function: for use in workshop [2] Hardened steel base [3] Surface ground with V-groove [4] Spindle length 250mm [5] With scriber, scriber clamp & spindle clamp.	
MEE 58	Plumb&SpiritLevel	[1] Function: for use in workshop [2] Made of aluminium [3] With "rainbow" tubes 600mm.	
MEE 59	Riveting tools	**Riveter** [1] Function: general metalwork shop use. [2] For all standard "pop" rivits 3 to 5mm **Rivet Set-Up Set** [1] Function: for use in workshop [2] Made of hardened steel [3] For drawing up rivits before closing [4] In wooden stand [5] Set of 5 pieces for 4, 6, 8, 10 & 12 mm rivits	
MEE 60	Screw starter Set	Screw starter Set [1] For slotted screws w/ expanding twin bit heads that fit inside screw to hold securely	

		[2] Three (3) piece set has brass handles and accommodates0, 1, 2, 3, 4, 5, 6, 8, 10, 12 and 1/4 inch screws [3] Length: 6 inches Screwstarter Set [1] For cross point screws, w/ expanding split headsthat hold screws securely [2] Three (3) piece set has brass handles and accommodates0, 1, 2, 3, 4, 5, 6, 8, 10, 12 and 1/4 inch screws [3] Length: 8 inches Combination Screwdriver Set [1] Straight blade screwdrivers: 3/16 x 6 1/2 inch; 1/4 x8 13/32 inch; 1/8 x 6 1/4 inch; and 11/64 x 13 1/4 inch [2] Phillips blade screwdrivers: #1 x 6 21/32 inch; #2 x8 13/32 inch; and #2 x 12 13/32 inch [3] Torx drivers: T15 x 7 7/32 inch and T20 x 7 7/32 inch [4] Pozi screwdrivers: #1 x 6 21/32 inch and #2 x 8 13/32inch Hand Tool - Srewdriver Set [1] With insulated transparent shaft and splitproof handle, chrome vanadium round blade. Approx. sizes: 2.5 x 60 mm and 3 x 80 mm. [2] Chrome vanadium steel, nickel plated, parallel tip with plastic insulated blade and plastic handle. Approx. size: 4 x 100mm.	

		[3] Chrome vanadium steel, nickel plated, with flared tip and plastic handle. [4] Chrome vanadium steel, nickel plated, "chubby" type with flared tip and plastic handle. Approx. size: 6 x 25 mm. [5] For voltage testing, flat nose, plastic handle, insulated blade with neon light. Testing voltage: 110 to 440 V. Approx. size: 3 x 120mm [6] Phillips type, chrome vanadium steel, nickel plated with insulated split-proof handle. Approx. sizes: No. 1 x 75mm, No.2 x 100mm and No.3 x 150mm. Jewellers Screwdriver Set [1] Six parallel tip sizes 0.6 to 2.5mm and four crosshead tip sizes 1.5 to 3mm diameter. [2] Supplied in plastic wallet or box. A01B/37 Screwdriver [1] Power: 600W [2] Speed: 0-3560 rpm [3] Bit reception: 6mm [4] Working radius: 21mm [5] Metal gearbox [6] Depth setting nose [7] Belt clip [8] Weight: 1.5kg [9] Magnetic bit holder Phillips No2 [10] Qty 1 set, bits	

		Screwdriver Set [1] Insulation is injection molded on high gradevanadium steel blade and permanently attached to shockresistant plastic handle [2] Four (4) slotted drivers include 1/8 x 3, 1/8 x 4,3/16 x 5, and 1/4 x 6 inch and 3 Phillips driversincluding #0 x 2 1/2, #1 x 3, and #2 x 4 inch Screwdriver Set [1] Twelve (12) piece Phillips/slotted set for general use [2] Phillips sizes: #0 x 2, 2 x 1 1/4, 1 x 3, 2 x 4, 1 x 6,and 1 x 10: Slotted sizes: 1/4 x 1 1/4, 3/32 x 2, and3/16 x 3, 1/4 x 4, 5/16 x 6, 1/8 x 8 Screwdriver, Assorted, Set of Six [1] Chrome vanadium steel, nickel plated, resin handles, standard pattern, set of six, approximate dimensions: 6mm x 1100mm 6mm x 100mm 5mm x 100mm 3mm x 90mm 3mm x 60mm 6mm x 50mm Screwdriver, Assorted, Set of Four [1] Chrome vanadium steel, nickel plated, resin handles, set of four approximate dimensions: [2] Flat, round shank, 150mm blade [3] Flat, round shank, 300mm blade [4] Phillips, 100mm blade	

		[5] Phillips, 200mm blade Screwdriver, Cross Point, Phillips [1] For electronics workshop with insulated plastic handle. [2] Stubby types [3] Sizes: 5x25 mm (No. 1) 5x40 mm (No. 1) 6x25 mm (No. 2) 6x40 mm (No. 2)	
MEE 61	Cabinetwith Tools	[1] Type: Constructed of steel plate framing, upper and lower doors are sliding type. Upper and lower cabinets are equipped with masterkeys locks. Overall size is abt 1,700 mm[W] x 520 mm[D] x 1,840 mm[H] finished with long-lasting surface. Lower cabinet has six adjustable shelves with 8 large plastic tote trays [abt 480 mm[W] x 380 mm[D] x 105 mm[H]], 6 smaller plastic tote trays [abt 320 mm[W] x 200 mm[D] x 100 mm[H]] and 10 plastic trays[abt 335 mm[W] x 170 mm[D] x 105 mm[H]]. Tools equipment for automotive [2] 1 lb. lead hammer: 1 pc [3] Rubber mallet: 1 pc [4] 3 pc. flare nut wrench set: 1 set [5] 16 pc. puller tool panel, asst.: 1 pc [6] 11 pc. ignition wrench set: 1 set [7] 13 pc. comb. wrench sets: 2 sets [8] 15 pc. metric comb. wrench set: 1 set [9] Univ. spark plug sockets, 3/8 " drive, 5/8 socket: 2 pcs	

		[10] Univ. spark plug sockets,3/8" drive, 13/16" socket: 2 pcs [11] 10 pc. metric hex key set: 1 set [12] 3/8" reversible ratchets: 3 pcs [13] 1/4" reversible ratchets: 2 pcs [14] 6 pc. screwdriver sets: 2 sets [15] 5 pc. phillips screwdriver set: 1 set [16] Brake shoe retaining spring tool: 1 pc [17] Adj. battery terminal and post tool cleaners : 2 pcs [18] Battery side terminal cleaners: 2 pcs [19] Bearing race driver set: 1 set [20] Valve spring compressor tool: 1 pc [21] Brake spring tool: 1 pc [22] Starter snap ring tool: 1 pc [23] Tire gauges: 2 pcs [24] Pipe wrenches, 6": 2 pcs [25] Pipe wrenches, 10": 2 pcs	
MEE 62	Dial Gauge	[1] Dial & Bezel rotatable through 360 degrees for zero setting [2] Spindle, rack & pivot to be made of stainless steel [3] Contact point hardened & ground [4] With revolution counter [5] Supplied in fitted case [6] Range: 10 mm, Graduation: 0.01 mm, Reading: 0-50-0, Dial diameter: 60 mm approx [7] Magnetic base with 3 energised sides [8] Permanent magnet type with push button for on and off [9] Supplied with brackets and attachments and fitted case [10] Approximate dimensions: Size of base, 80x55x55 mm, Diameter of column, 25 mm	
MEE 63	Markingouttools	**(a)20no. Engineers Square** [1] Workshop grade	

		[2] Blades to be hardened, tempered and precision ground [3] Blade length: 100 mm approx **(b)12 no. Ext. Micrometer** [1] Metric graduation [2] Hardened & ground alloy spindle, with locknut [3] Ratchet or friction thimble [4] Rust resistant finish [5] Supplied in fitted case [6] Approx. Sizes (one of each): 0 to 25 mm, 25 to 50 mm, 50 to 75 mm, 75 to 100mm [7] Graduations 0.01 mm **(c)12no. Measuring Tape** [1] Flexible steel blade, steel case rust resistant finish [2] Calibrated in metric and inches [3] Length: 3 metres **(d)2o no. Scriber** [1] Single ended [2] Approximate length: 180mm **(e)20no. Steel Rule** 1] Stainless steel, non rusting [2] Calibrated in metric & inches [3] Length 300mm **(g)2no. Vernier HT. Gauge** [1] Metric & Inch graduations [2] Base, beam, sliding head & scriber hardened and lapped	

		[3] Fitted with Locknut & fine adjusting [4] Anti-glare rust resistant finish [5] Flush fitting vernier [6] Complete in fitted case [7] Capacity from zero: 300mm x 0.2mm & 0.001 inch	
MEE 64	Measuring Tools Set	[1] Measuring equipment to be used for machining shop works. [2] Measuring tools set must be manufactured and meet accuracy according to ISO or JIS or DIN standard. [3] 10 PCS., VERNIER CALIPER: - 6 inch. / 150 mm. size - Accuracy of 1/128 inch. and 0.05 mm. - Used to measure outside/inside and depth dimensions. - Scale type with lock screw. - Made of stainless steel. [4] 10 PCS., VERNIER CALIPER: - 6 inch. / 150 mm. size - Accuracy 0.001 inch. and 0.02 mm. - Used to measure outside/inside and depth dimensions. - Scale type with lock screw. - Made of stainless steel. [5] 2 SETS, DIAL VERNIER CALIPER: - 150 mm. size - Reading at dial with accuracy of 0.01 mm. [6] 2 SETS, DIGITAL VERNIER CALIPER: - 150 mm. size	

		- Reading through LCD with accuracy of 0.01 mm. and 0.0005 inch. - Inch. or mm. measuring can be selectable [7] 1 SET, DIGITAL VERNIER CALIPER: - 300 mm. size. - Reading through LCD with accuracy 0.01 mm. and 0.0005 inch. - Inch. or mm. measuring can be selectable. [8] 5 SETS, OUTSIDE MICROMETER: - 0-25 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips - Ratchet stop type or friction drive type. - Lockable at any position. [9] 5 SETS, OUTSIDE MICROMETER: - 25-50 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Lockable at any position. [10] 5 SETS, OUTSIDE MICROMETER: - 50-75 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Lockable at any position. [11] 5 SETS, OUTSIDE MICROMETER: - 75-100 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Measuring error _0.003 mm. - Lockable at any position. [12] 1 SET, INSIDE MICROMETER: - 25-50 mm. size with accuracy of 0.01 mm. - High-grade steel measuring face	

		- Ratchet stop type or friction drive type. - Lockable at any position [13] 1 SET, DEPTH MICROMETER: - 0-150 mm. size with accuracy of 0.01 mm. - Measuring spindle is harden and ground. - Base size is min. 100 mm. - Ratchet stop type or friction drive type. [14] 1 SET, UNIVERSAL BEVEL PROTECTOR: - A complete set of Universal Bevel Protector. - Protector head with magnifier lens, 12" blade. - Graduation 1° Dial, 5 min. Vernier. - Hardened stainless steel. [15] 10 SETS, SCREW PITCH GAUGE: - Set of metric screw pitch gauge size 0.4-0.7 mm. min. 21 pcs./set - Unified screw pitch gauge size 4-12 TPI min. 42 pcs./set and can be lockable. [16] 10 SETS, RADIUS GAUGE - Size 0.5-13 mm. (0.5 mm. stepped) - Furnished with 15 pcs./set. [17] 1 SET, COMBINATION SQUARE: - Blades size 300 mm. - Square head 45° and 90° - Complete with center head and protractor head - Scale graduation 0.5 mm, 1 mm. [18] 1 SET, MORSE TAPER GAUGE: - Size of MT1, MT2, MT3 (Outside and Inside) [19] 1 SETt, GAUGE BLOCK - Made of steel alloy - Metric system, 32 pcs./set, quality grade zero, including certification.	

		- Including with maintenance kit set [20] 1 SET, SINE BAR: - Size 150 mm. Item Code Item Description / Specifications [21] 1 TOOL CABINETS - Steel cabinet size (approx) WxDxH = 90x45x75 cm. with 2 sliding glass door standard	
MEE 65	Basic Hand Tools Set	BIHEXAGON SOCKET SET [1] 26 pieces - metric sockets: 8,9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33 and 36 mm. [2] Hex bit sockets: 4, 5, 6, 7, 8, 10, 12, 14, 17 and 19 mm. [3] Philips sockets: 2, 3 and 4. [4] Spark plug sockets: M14 and M10. [5] Chrome molybdenum screwdriver bits: 9 and 14 chemically blacked. [6] Accessories: - Extension bars: 75, 125, 250 mm. - Universal-joint. - T-handle. - Swivel handle and black rubber ratchet handle. [7] Robust fitted case with magnetic parts tray, security padlock and cushion grip handle. SCREW DRIVER SET [8] Handle material is exceptionally resistant to hydrocarbon and other oils. [9] Flanged tang molded inside handle.	

		[10] Chrome plated vanadium steel. [11] Short blasted tip. [12] Tray or container. [13] Flared and parallel tips each of: No. Blade BladeBlade (piece) width thickness length (mm) (mm) (mm) 2 5.5 2 100 2 6.5 1.2 125 2 6.5 1.2 150 3 8.0 1.2 150 3 8.0 1.6 200 3 10.0 1.6 200 3 12.0 2.0 250 [14] Philips or pozidrive tips: No. Trip No. Blade Blade (piece) diameter length (mm) (mm) 2 PZ1 5.0 30 2 PZ2 6.0 30 2 PZ0 4.0 75 2 PZ1 5.0 75 2 PZ1 5.0 100 3 PZ2 6.0 125 3 PZ3 8.0 150 3 PZ4 9.9 200 * PZ = ISO code 2,380 and 4,757 [15] 3/8" square drive insert bit set (17 pieces) - It is a bit adapter set and can be used with socket accessories or torque wrenches.	

		- House or container made of steel box and bits fitted with a form or plastic insert. - Bit set consists of: - Universal bit adapter. - Spinner handle. - 4 metrics hexagon bits, 3, 4, 5, 6 mm. - 5 A/F hexagon bits 3/32, 1/8, 5/32, 3/16, _ inches. - 3 long reach slotted screw insert bits 3, 4, 5.5 mm. - 3 pozidrive bits PZ1, PZ2, PZ3. - Container or box with cover. INSULTATED PLIERS SET [16] They are for electricians used. [17] High quality steel in good forging. [18] Hot forged for strength and durability. [19] Smooth action. [20] Anti-slip moulding handle. [21] Insulated handle. [22] Pliers set are supplied the same brand consisting of: - 5 multi-grip plier jaw or channel lock pliers. - 240 mm. long max. jaw opening more 45 mm. - Slip joint with more than 6 positions. - 5 combination pliers. - Serrated jaw with cutting edge. - Max. wire cutting 1.6 mm. - 180 mm. long. - 5 snipe nose pliers or long nose pliers. - Taper straight nose with serrated jaw and side cutter. - Max. wire cutting 1.6 mm. - 200 mm. long. - 5 diagonal cutter pliers or side cutter pliers. - Fine sharpened for cutting copper wire.	

		- Max. wire cutting 1.6 mm. - 160 mm. long. - 5 wire stripper pliers. - Spring release. - Adjustable screw with lock nut for repetition work. - Strip wire cap. 0.5 - 6 mm. - 160 mm. long. - 5 end cutter pliers. - Finely sharpened for cutting copper wire. - Max. wire 1.6 mm. - 160 mm. long (approx.). - Cantilever tool box. - 3 tier construction. - Double handle closing 5 compartments. HAMMER TOOL SET Steel Hammer [23] Drop forging hammer processing. [24] Wooden or fiberglass handles. [25] Hammer head fixing (wooden handle). [26] 1-ball pein hammer size 4 Oz. 270 mm. long 65 head width 18 head thick. [27] 1-ball pein hammer size 16 Oz. 350 mm. long 100 head width 29 head thick. [28] 1-joiners warrington hammer No.0 size 8 Oz. 270 mm. long 105 head width 25 head thick. [29] Steel claw hammer (for nailing) size 16 Oz. 320 mm. long 130 head width 32 head thick.	

		[30] Club hammer size 4 lbs. 240 mm. long 100 head width 42 head thick. Soft Face Hammer [31] 1-Copper/Copper hammer size 32 Oz. hammer No.1 face dia. 32, 280 mm. long. [32] 1-Nylon soft face hammer size 24 Oz. face dia. 38, length 300 mm. [33] 1-Rubber mallet size 24 Oz. head size 74x127 mm, length 380 mm. Cold chisels [34] 2-cold chisels blade width 10 mm. length 150 mm. Item Code Item Description / Specifications [35] 2-cold chisels blade width 16 mm. length 200 mm. [36] 1-pinch bars blade width 25 mm. length 450 mm. Punches [37] 2-center punches trip O 6 mm. length 150 mm. [38] 2-taper punches trip O 6 mm. length 150 mm. [39] 2-automatic center punch - Pushing the end cap cause a spring to release for impact action. - Impact is adjusted by rotation of the knurl. - Trip O 6 mm. length 140 mm. [40] Hacksaw 2 sets. - Light weight construction resistant to oxidising. - Unique design giving increased blade tension. - Front hand rest. - Hand guard protection. - Die cast Aluminum handle and square section frame.	

		- Cantilever blade adjustment. - Blade length 300 mm. standard size. - 24 blades for 18 TPI (Teeth per Inch) HSS. - 24 blades for 24 TPI HSS. [41] Files with handles. - 2-half round files 200 mm. long. - 2-round files 200 mm. long. - 2-flat files (corse) 200 mm. long. - 2-flat files (fine) 200 mm. long. - 2-square files 200 mm. long. [42] Pullers They are suitable for moving gears bearings sprockets and pulleys which be strong gripping and made of drop forged from high quality steel and heat treated. - Twin and tripple leg pullers. - Internal and external used. - 1-twin leg puller spread 150 mm. reach 80 mm. - 1-twin + triple leg spread 200 mm. reach 140 mm. - 1-bearing puller kit. - Bearing separators fit behind bearing where puller jaw cannot enter. - All kits supplied in a metal case. - kit content: - Bearing separator 35 - 140 mm. capacity used with 2-leg puller. - Beam, screw, thrust nut and thrust race. - Main rods, nuts and washers (2). - 125 mm. extension rods (2) - Extension rods (4)	

		- Separated. [43] Lock grip plier. It is serrated curved jaws with power full locking mechanism and quick release lever and froged jaws are harded, high quality housing. - 2-curves jaw lock grip pliers 190 mm. length 42 mm. jaw capacity. - 2-curves jaw lock grip pliers 235 mm. length 63 mm. jaw capacity. - 2-straight jaw lock grip pliers 190 mm. long 42 mm. jaw capacity 235 mm. long 63 mm. jaw capacity. [44] 6 wires crimpers. - Color coded crimping. - Screw shear cuts terminal screw. - Crimp ignition wire cutter. - General purpose wire cutter. - Wire stripping range 0.70 to 6 mm. O wire. - Rubber insulated handle. [45] A 5-drawer roller cabinet. - Heavy duty plate side handles. - Ball bearing slides. - 5-drawers with sliding rail with key. - Drawer dimension width depth height (mm.) (mm.) (mm.) - 2 drawers (with 580 410 52 9 compartments) - 2 drawers 580 410 100 - 1 drawer 580 410 160 - 2 swivels and 2 fixed castors dia. 125 mm.	

		- Top can be mounted to form 25 mm. deep tray reversed to provide a smooth for work table.	
MEE 66	Hand tools	**2 no. Anvil with Stand** [1] Function: for use in workshop [2] All steel construction, heavy cast iron stand [3] 600mm length [4] 300mm overall width of base [5] Weight 50kg approx **6 no. - Figure Stamp Set** . [1] Function: for use in workshop [2] Figures 0 to 9 height 5mm [3] In plastic or sheet metal box **Bench Vice** [1] Drop forged steel [2] Width of Jaw 120mm [3] Opening 140mm, quick release [4] One pair detachable Copper or lead grips [5] One pair detachable fibre grip **12no. Pipe Wrench** [1] Function: for use in workshop [2] Drop forged steel [3] Crescent type, heavy duty [4] Steel handle with spring & adjusting nut [5] For nuts up to 2 inches **12no. Open Ended Wrench Set** [1] Function: for use in workshop [2] Metric graduation	

		[3] Regular head 15 deg angle jaw [4] Set of 8, sizes 8 to 27mm [5] Made in chrome vandium steel **12no. Vice Grip Pliers** [1] Function: for use in workshop [2] Forged alloy steel jaw [3] Pressed steel body [4] Rust resistant finish [5] Lock & quick release lever [6] Approx 175mm Length [7] Capacity 32mm **12no. Screwdrivers** [1] Function: for use in workshop [2] Set of 4 chrome vanadium steel [3] Hammer proof plastic handles [4] Approx mm sizes - 3x70 length 140mm - 4x90 length 160mm - 6x130 length 220mm - 8x170 length 320mm **20no. Hacksaw** [1] Function: for use in workshop [2] Adjustable tubular metal frame [3] Shaped handle, blade 250-300mm [4] With qty 50, 18 TPI spare blades	
MEE 67	sheet metal tools	12no. Tool boxes [1] Function: for use in workshop [2] Steel type, with two trays	

		[3] Handles & locking catch for pad lock. [4] Approx size: 175x200x500mm Consisting of : **6no. Blow Lamps** [1] Function: for use in workshop [2] Fuel: petrol or paraffin [3] Capacity 0.75 to 1 litre [4] Fitted with evercool handle [5] Saftey devices [6] Automatic cleaning needle **6no.Soldering Iron** [1] Function: for use in workshop [2] Copper, non electric [3] Straight with diamond tip [4] Wooden handle, weight 450gr. **12no. Punch & Chisel Set** [1] Function: for use in workshop [2] 12 piece set [3] In wooden or metal holder [4] Approx Specification: - 1/4 inch cape chisel - 5/16" cape chisel round nose - 3/8" diamond point chisel - 1/4" cold chisel - center punch - solid punch - drift punch	

		- 5/8" cold chisel - 1/8" pin punch - 5/32" pin punch **12no. Tap & Die Set, Metric Small** [1] Function: for use in workshop [2] HSS set of 7, circular split pattern [3] To contain taper, 2nd, & bottoming taps, dies, die stocks & tap wrenches [4] Supplied with fitted case [5] Metric sizes: 6, 7, 8, 9, 10, 11 & 12mm **12no. Tap & Die Set, Metric Large** [1] Function: for use in workshop [2] HSS, Set of 6, circular split pattern [3] To contain taper, 2nd, & bottoming taps, dies, diestocks & tap wrenches [4] Supplied in fitted case [5] Metric sizes: 14, 16, 18, 20, 22 & 24mm **12no. Tap & Die Set, BSW** [1] Function: for use in workshop [2] HSS, set of 7, circular split pattern [3]To contain taper, 2nd & bottoming taps, dies, diestocks & tap wrenches [4] Supplied in fitted case [5] BSW sizes: 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4 inch BSW **12 no. Wing Divider** [1] Function: for use in workshop	

		[2] With wing & locking screw [3] Fine polished [4] Box jointed [5] Suitable for all metal work [6] 200mm long **12no.Protractor** [1] Function: for use in workshop [2]85mm diameter made of steel [3] Graduated to 180 deg in both directions **3no. Universal Surface Gauge** [1] Function: for use in workshop [2] Hardened steel base [3] Surface ground with V-groove [4] Spindle length 250mm [5] With scriber, scriber clamp & spindle clamp. **6no. Plumb & Spirit Level** [1] Function: for use in workshop [2] Made of aluminium [3] With "rainbow" tubes 600mm. **Riveter** [1] Function: general metalwork shop use. [2] For all standard "pop" rivits 3 to 5mm **12no. Rivet Set-up Set** [1] Function: for use in workshop [2] Made of hardened steel [3] For drawing up rivits before closing [4] In wooden stand [5] Set of 5 pieces for 4, 6, 8, 10 & 12 mm rivits	

MEE 68	FILES	**Round Files** [1] Set of 9 files [2] Tapers slightly to a point [3] For circular openings and concave **Bastard, second and smooth** [1] Length: 100mm, 200mm and 300mm [2] Complete with handles **Square Files** [1] Set of 8 files [2] For slots and keyways [3] Tapers slightly to a point [4] Double cut on all four sides [5] Bastard, second and smooth [6] 150,250 and 300 (no smooth) [7] Complete with handles **Three Square Files** [1] Set of 8 files [2] Tapers slightly to a point [3] For filing out sharp corners and internal angles [4] Bastard, second and smooth [5] Length: 150mm, 200mm and 300mm (no smooth) [6] Complete with handles **Tools - Engineers Flat Files** [1] Function: for use in workshop [2] Set of 8 with handles [3] Approx sizes & cuts: - Flat 300mm bastard - Flat 250mm second cut - Flat 200mm smooth cut - Halfround 250mm bastard - Round 250mm bastard	

		- Round 250mm second cut - Triangular 250mm second cut - Square 250mm second cut	
MEE 69	REAMERS	[1] made of special non-porous carbon cylindrical design [2] 150 mm long, drop-forged [3] with the following diameters a. 10 mm, 12 pcs. b. 15 mm, 12 pcs. c. 20 mm, 12 pcs. d. 25 mm, 12 pcs. e. 30 mm, 6 pcs. Reamers Expansion [1] Expands for resizing purposes set of 9 [2] Expansion to offset wear by expansion screw carbide tipped. [3] Reamer dia: 3/8" to 1 1/4" [4] Shank dia: 5/16" to 1" [5] Overall length: 7" to 11" [6] Standard sizes. Reamers Morse Taper Sockets [1] Carbon steel with straight shanks and square drives, round shanks using electric drills set of 6 [2] Small end dia: 0.25" to 1.471" [3] Large end dia: 0.367" to 1.799" [4] Overall length: 3.75" to 9.75" [5] Taper nos: 0 to 5 [6] Standard sizes. Adjustable Reamers [1] Function: general machine shop work [2] Set of 9, cylindrical shaft square blades	

		[3] Made of special steel [4] Right hand cutting [5] Complete in wooden box [6] Approx measuring range:10-31mm	
MEE 70	Heavy Duty Photocopiers	General type Monochrome multifunctional for A3 formats Technology: Laser, Mono component Engine speed Up to 82/41 pages per minute A4/A3 Resolution:1,200 dpi quality (1,800 dpi level x 600 dpi) (copy/print), 600 x 600 dpi, 256 greyscale (scan) Warm-up time30 seconds or less from power on Time to first copy Approx. 2.9 seconds Dimensions (W x D x H) Main unit: 680 x 811 x 1,190 mm Weight Main unit incl. toner: Approx. 188 kg Power consumption Printing: 2000 W or less, Stand-by: 630 W, Sleep-mode: 10 W Power source AC 220 ~ 240 V, 50/60 Hz Noise (ISO7779) Printing: 75 dB(A), Stand-by: 58 dB(A) Safety standards TÜV/GS, CE - This product is manufactured according to ISO 9001 quality standard and ISO 14001 environmental standard. PAPER HANDLING Input capacity 2 x 1,500 sheet high-capacity paper feeder, 60–160 g/m², A4, 2 x 500-sheet universal paper feeder, 60–160 g/m², A3–A5R, Folio; 100-sheet multi-purpose tray, 45–200 g/m², A3–A6R, Folio Max. input capacity with options8,100 sheets A4 Duplex unit Double-side printing as standard; A3–A5, 64–160 g/m² Processor: Power PC750FX -600MHz Memory Standard 64 MB, max. 512 MB (2 additional DIMM slots for 32, 64, 128, 256	

		MB), 1 CompactFlash® card slot Controller language PRESCRIBE IIe Emulations PCL 6, KPDL3 (Postscript 3 compatible), Automatic Emulation Switching, KC GL (HP-7550A), Line Printer, IBM Proprinter X24, EPSON LQ 850, DIABLO 630 Fonts80 outline fonts (PCL6), 136 PostScript KPDL 3 fonts, 1 bitmap font, 45 types of one-dimensional barcodes plus two-dimensional barcode (PDF-417) Features EMPS, Proof and hold, Private print, Job storage, Job management functionality COPY Max. original size A3 Digital copy features Energy save mode, Interrupt copy, Scan once print many, EcoPrint mode, Electronic sort, Rotate sort, Rotate copy, n-up copy, Split copy, Cover mode, Page numbering, Image overlay, Margin shift, Border erase, Positive negative, Mirror, Proof mode, Booklet copy, Program function, Job building, Job reservation, Image centring, Repeat copy, Form registration, Shared data box, Synergy print box Preset magnification ratios 22 Reductions/9 Enlargements Zoom range 25 - 400 % in 1% steps Continuous copy 1 - 9.999 Memory capacity Standard 128 MB and 40 GB HDD SCAN Bundled software DB-Assistant, Scanner file utility, Address Book, Address Editor, TWAIN source File type TIFF, PDF (high compressive/encrypted) Original recognition Text, Photo, Text + Photo, OCR Max. scan size A3 Scan functionalities Scan-to-PC, Scan-to-email, Scan-to-email, Network TWAIN, Scan-to-SMB Scan resolution 600, 400, 300, 200 dpi	

		Scan speed 110 originals per minute (300 dpi/A4 Duplex) Interfaces Standard interface Slot for optional Compact Flash®-Card, USB 2.0 (Hi-Speed), High speed bi-directional parallel (IEEE 1284), Fast Ethernet (10/100BaseTX), KUIO-LV interface slot	
MEE 71	Hydraulics Bench and its accessories	[1] Self-contained mobile service module. [2] Constructed from lightweight, corrosion resistant glass reinforced plastic. [3] Open channel incorporated in bench top. [4] Volumetric flow measurement for both high and low flow rates. [5] Capacities: high flow 40 litres, low flow 6 litres. [6] Easy to use quick-release connections allowing rapid exchange of accessories. [7] Pump tank capacity 160 litres. [8] Supplied with computer aided learning programs (Windows based) for use with the Hydraulics Bench accessories. [9] For demonstration of the Eighteen optional Armfield accessories [10] When coupled to the bench, the accessories are immediately ready for use and require no additional service items. Accessories to be used in conjunction with Hydraulic Bench [1] Eighteen accessories: Dead weight pressure gauge calibrator Hydrostatic pressure Flow over weirs utilising bench top channel Metacentric height	

		Bernoulli's theorem demonstration Impact of a jet Orifice and free jet flow Orifice discharge Energy losses in pipes Flow channel with models Osborne Reynolds' demonstration Flow meter demonstration Energy losses in bends and fittings Free and forced vortex Hydraulic ram Demonstration pelton turbine Series/parallel pumps Centrifugal pump characteristics [2] When coupled to the bench, the accessories are immediately ready for use and require no additional service items.	
MEE 72	Gasoline & Alternative Fuels Engine Test Bed	Test bed specifically designed for educational analysis of performance of automobile engines. Provided with all necessary instruments for measurement of at least the following parameters: - Fuel consumption - Air flow - Temperature - RPM Used for demonstration of performance of Petrol Engines at different throttle settings and different load Should be provided with Data Acquisition system for monitoring. Should feature an eddy current dynamometer and measuring instruments for measuring key parameters required for	

		performance analysis of an engine. The eddy current dynamometer should provide a variable load on the engine, allowing the characteristic power and torque curves to be reproduced in the laboratory. It should have a rating of at least 80 kW It should allow fast coupling of the engine to the dynamometer The test bed should be equipped with a dynamometer control panel with necessary safety instruments. • Eddy current Dynamometer: Capacity: 50 kW, Water Cooled • Engine: a. 1400 cc, Petrol Engine mounted on frame • Air Box with Orifice plate for Air flow measurement. • Fuel Tank. • Propeller shaft with protective covering. • Measuring Instruments :RPM Sensor, Differential Pressure Transmitter for Air, Fuel Level Sensor , Thermocouples , Torque Sensor Supplied with: 1 x set of Anti Vibration Pads 1 x Auxiliary cooling unit for engine 1 x Exhaust Gas Calorimeter 1 x Cooling Water Flow Transmitter 1x Pipe In pipe type heat exchanger Thermocouples for water & gas temperature. Data Acquisition System & Software: 16 Channel High speed DAQ Card with USB Port Data Acquisition Card, 16 Channel High speed DAQ Card with USB Port and LabVIEW based Software for data acquisition, real time display, graphical representation, calculation & tabular results. With P-V Diagram Module TO allow at least the following tests:	

		Engine cylinder pressure Crank angle Encoder Experiments Measurement & Calculation of Volumetric efficiency. Measurement & Calculation of specific fuel consumption Measurement & Calculation of brake thermal efficiency Determining air / fuel ratios Heat Balance Test	
MEE 73	Diesel Fuel Engine test bed	Test bed specifically designed for educational analysis of performance of automobile engines. Provided with all necessary instruments for measurement of at least the following parameters: - Fuel consumption - Air flow - Temperature - RPM Used for demonstration of performance of Petrol Engines at different throttle settings and different load Should be provided with Data Acquisition system for monitoring. Should feature an eddy current dynamometer and measuring instruments for measuring key parameters required for performance analysis of an engine. The eddy current dynamometer should provide a variable load on the engine, allowing the characteristic power and torque curves to be reproduced in the laboratory. It should have a rating of at least 80 kW It should allow fast coupling of the engine to the dynamometer The test bed should be equipped with a dynamometer control panel with necessary safety instruments.	

		• Eddy current Dynamometer: Capacity: 50 kW, Water Cooled • Engine: a. 1400 cc, Diesel Engine mounted on frame • Air Box with Orifice plate for Air flow measurement. • Fuel Tank. • Propeller shaft with protective covering. • Measuring Instruments :RPM Sensor, Differential Pressure Transmitter for Air, Fuel Level Sensor , Thermocouples , Torque Sensor Supplied with: 1 x set of Anti Vibration Pads 1 x Auxiliary cooling unit for engine 1 x Exhaust Gas Calorimeter 1 x Cooling Water Flow Transmitter 1x Pipe In pipe type heat exchanger Thermocouples for water & gas temperature. Data Acquisition System & Software: 16 Channel High speed DAQ Card with USB Port Data Acquisition Card, 16 Channel High speed DAQ Card with USB Port and Labview based Software for data acquisition, real time display, graphical representation, calculation & tabular results. With P-V Diagram Module TO allow at least the following tests: Engine cylinder pressure Crank angle Encoder Experiments Measurement & Calculation of Volumetric efficiency. Measurement & Calculation of specific fuel consumption Measurement & Calculation of brake thermal efficiency Determining air / fuel ratios Heat Balance Test	

MEE 74	Hydraulic Braking Systems trainer	The module must include a bench-top hydraulics trainer that allows the student to undertake a series of hands-on tasks that relate to hydraulic systems. It must be complete with all the hydraulic devices, connectors, mechanical and electrical components The trainer provides knowledge and skills for the correct and responsible maintenance and repair of hydraulic brake system. It includes of following: • A dual-circuit brake system • Disc brake • Drum Brake • Brake load distributor • Tandem brake system The trainer features hydraulic measuring points for pressure measurement. A built-in hydraulic pressure switch is given to activate brake light. The disc brake and drum brake enable rotation and disassembly manually. Supplied with accessories for: • Brake charging • Brake bleeding • Brake cylinder repair • Brake system leak • Function test • Test and adjustment on brake pressure • Brake power regulator Other related accessories for the functionality of this equipment shall be provided. User/Operational manual shall be provided for this equipment.	

MEE-75	**21st century learning system for: Mechanical Engineering Foundation Programs**	**21st CENTURY LEARNING SYSTEM:** With Classroom Management System (CMS) with Digital Resource Library with 4700 readymade learning units should be new generation of software that assists teachers in utilizing and managing a computer multimedia lab or 1:1 classroom. It transforms traditional classrooms into educational platforms which allow students to develop 21stCentury skills and teachers to manage an ICT rich classroom without compromising the way they naturally would like to teach. CMS should utilize cutting edge features which allow for a broad range of learning techniques and communication methods, while harnessing features such as screen spying, broadcasting, computer/screen locking, file sharing, and many more to maximize earning effectiveness in a 21st Century classroom. Must be compatible with existing Smart Classrooms digital content and hardware that have been already installed different National Polytechnics and TTI's in Kenya. **Specification:** CMS should support additional apps which are able to be purchased directly from the website provider administrator. While, not a comprehensive platform, these apps help educators who want to bring specific 21stCentury Elements into the classroom. Examples of these apps are: • **Polling:** Using any device, teachers will be able to immediately poll their students to get real time responses and assessment. • **Digital Whiteboard:** Teachers can use their device to replicate many of the same features as a digital whiteboard at a fraction of the cost. Now a teacher	

		can use ICT in their demonstrations with minimal infrastructure. • **Exam Creation:** Teachers can build exams for students using exam authoring tools • **Exam Dissemination:** Teachers can digitally disseminate exams to their students and retrieve them for automatic scoring. • Compatibility: - Windows 10 - Local- Not online & No Server Needed • Devices Control Features • Learner Monitoring Features • Device Sharing Features • Utility Features • Learner Features Summary • Administration • Differentiated Instruction **Learning Management System (LMS)** **Features:** The LMS should be a comprehensive education tool designed to enrich courses by embedding digital Content and assessments into traditional teaching and learning. A full suite of content creation tools Is included to enable instructors and instructional designers to enhance their courses with customized digital content. Scheduling, communication, and web 2.0 tools allow multiple options for students and instructors to meet the diverse needs of learners in the 21st Century. The LMS should incorporates many instructor friendly features which enable complete course delivery or supplemental	

		course materials. Instructors are able to design their own curriculum, modify content, and import SCORM compliant modules for students to view. Instructors have complete control over content, assessment and grading scales. The LMS content delivery system tracks individual students' progress as they are guided through technology rich curriculum, which enhances 21st Century Skill competency, in addition to ensuring students meet the required learning outcomes of the course. The LMS should be a versatile learning platform which supports 21st Century learning models such as blended learning, and flipping the classroom. This flexibility enables institutions to create the most valuable learning opportunities possible and to maximize student capacity for independent learning. **Specification:** • WEB 2.2 Tools • Curriculum Development • Instruction Design • Content Delivery **DIGITAL CONTENT** (offline version, but 100% compliant for online in a later stages): a) Digital content Working with STEM, readymade engineering units up to BTEC Engineering Level 5 and specific digital content related to: b) Engineering Drawing (42 learning units) c) Inspection, Maintenance and Quality Management (60 learning units)	

		d) Machine and Instrument Engineering (72 learning units) e) Fluid Power (150 learning units) f) Mechanical Systems (62 learning units) g) Materials Engineering (51 learning units) h) Manufacturing Engineering (155 learning units) i) Industrial Control (159 learning units) j) Engineering Design (52 learning units) k) Manufacturing Technology (53 learning units) l) Robotics (87 learning units) m) Forces and Motion (95 learning units) n) Life skills - Business skills (199 learning units) - Personal skills (24 learning units) - Workplace problem solving (108 learning units) - Engineering mathematics (122 learning units) - English language skills (47 learning units) Each module should contains, presentations, animations, theory and instructional information, photos, interactive experiments, etc. The package should have software of 1 server License and 20 student license. The supplier may also offer to install the software on the existing server of the Smart Classroom and add Windows 2012/2016 network software to connect the 20 workstations. Lab set-up manual to be provided during the bidding process to show clearly how the lab will be set-up including drawings. **TEACHER DEMONSTRATION DESKTOP TRAINERS:**	

		(Should match with the above listed digital content packages) a) Industrial Control Trainer Teaching Set b) PLC Trainer Teaching Set c) Robotics Trainer Set d) Hydraulics Trainer Set e) Mechanisms Trainer Set f) Electro-Pneumatics Trainer Set g) Educational Robotics Invention Set h) Engineering Construction Set	
	IT package consisting of:		
	Server Kit	Supplied complete with Hardware of 1 number Server Computer of specifications: 4 core, 3.1 Ghz, 4Gb Ram, 1Tb Hard-disk, complete with Keyboard Mouse and Display minimum 15.6" with Windows 10 or Latest Windows Operating system.	
	Student PC Kit	Supplied complete with 20 student PC's with Minimum specifications: Intel i5 Display 15.6", 4Gb Ram Memory, 500 Gb hard-disk With Windows 10 or Latest Windows Operating System and Office Student.	
	Teacher PC Kit	- PC, i5-6500 3.2G, 8GB DDR4, 500GB 7200 rpm, keyboard, mouse, Windows 10, supermulti DVDRW, Office Home/Student 2016 - Monitor display 21,5", black, full HD, 1920x1080 resolution, 8 ms response time - USB business speaker set - Headset	
	Classroom / Workshop	- PC, i5-6500 3.2G, 8GB DDR4, 500GB 7200 rpm, keyboard, mouse, Windows 10, supermulti DVDRW, Office Home/Student 2016	

		- Monitor display 21,5", black, full HD, 1920x1080 resolution, 8 ms response time - USB business speaker set - Headset	
	Digital Whiteboard	- Projector kit professional complete consisting of: - Projector, short throw, finger touch, 3300 lumen, WXGA, 2 pens, wall mounting bracket - Document camera, USB, 15fps, 4x digital zoom - Active speaker set 2x40W, stereo, incl. wall mounting brackets - Projection board, image 16:10, dimension 2014x1285mm, special strip for touch sensor - Cabling kit; 10 mtr VGA, 10 mtr, USB with booster for PC connection	
	Whiteboard	- Standard white board - Dimensions (w*h): 180*120cm	
	Printer	- Color laser printer complete with set of toner cartridges (4), USB print cable - Height 280 mm - Width 423mm - Depth 289 mm - Weight 14.8 kg - Printing specifications - Draft mode resolution: 300 x 300 dots per inch (dpi) - Normal mode resolution: 600 x 600 dpi - Plain-Best mode resolution: Up to 2400 dpi - Input sensor resolution: 1200 x 1200 dpi - Device languages: PCL3 GUI - Up to 20 prints per minute in black and white - Up to 16 prints per minute in color - Scanning specifications - Resolution: up to 1200 x 1200 ppi optical	

		- Scan speed: Up to 7 ppm (b&w), up to 5 ppm (color) - Color: 24-bit color, 8-bit grayscale (256 levels of gray) - Maximum scan size from glass: 21.6 x 29.7 cm (8.5 x 11.7 inches) - Copying specifications - Copy speeds (default mode)*: Up to 20 copies per minute (cpm) - First copy out: As fast as 15 seconds - Resolution (text and graphics): Up to 600 x 600 dpi - Digital image processing *Copy speeds vary according to the printer model and the complexity of the document.	
	Teacher and student furniture kit consisting of:		
	Teacher furniture kit	Teacher desk wing 180x120x75 cm, 5 legs, colour light grey RAL 7035, melamine top: - Built with a sturdy steel frame with square legs - Tabletop thickness: 25mm - Mobile drawer block, 2 drawers, colour light grey RAL 7035, Melamine top - Central cilinder lock, provided with two keys - Scratch-proof epoxycoat - Provided with 4 wheels, 2 of which can be locked in position - Total weight 28 kg Teacher chair, NEN-EN 1335, adjustable arm rests, cross leg black, upholstery black, low backrest: - Sitting height: 44-58cm - Adjustable sitting angle - Padded seat and backrest Teacher cabinet 92x42x195cm	

		- Colour light grey RAL 7035, lockable, 5x shelves, segregation panel, 4x clothes hanger	
	Student furniture kit	20pcs Student chairs, chrome frame, strong PP seat, stackable to up to 35 chairs, colours; red, black, green and blue - Sitting height: 44,5cm 8pcs Student desk , 4 legs, colour light grey RAL 7035, melamine top, dimensions (w*d*h): 80x80x75cm. - Built with a sturdy steel frame with square legs - Tabletop thickness: 25mm 4pcs Student wing table 180x120x75cm, 5 legs, colour light grey RAL 7035, left hand model - Built with a sturdy steel frame with square legs - Tabletop thickness: 25mm 4pcs Student wing table 180x120x75cm, 5 legs, colour light grey RAL 7035, right hand model - Built with a sturdy steel frame with square legs - Tabletop thickness: 25mm 4pcs Mobile drawer block, 2 drawers, colour light grey RAL 7035, melamine top - Central cilinder lock, provided with two keys - Scratch-proof epoxycoat - Provided with 4 wheels, 2 of which can be locked in position - Total weight 28 kg Student lockers, 3 rows of 4 lockers per unit	
	Storage cabinets and equipment consisting of:		
	Storage cabinets open frond	- Storage cabinet colour light grey RAL 7035, 92.5x42x195cm, open front, 4 shelves	
	Storage cabinets lockable	- Storage cabinets 90x40x180cm, with 4 shelves, lockable	

SUMMARY OF TECHNICAL SPECIFICATIONS

TENDER FOR SUPPLY, DELIVERY, INSTALLATION, CALIBRATION, COMMISSIONING AND TRAINING ON THE USE AND MAINTENANCE OF AUTOMOTIVE ENGINEERING EQUIPMENT FOR ALDAI TECHNICAL TRAINING INSTITUTE

The Goods and Related Services shall comply with following Technical Specifications and Standards:

Item No	Name of Goods or Related Service	Technical Specifications and Standards	Compliance
AEE 1	CNC lathe machine	CNC Lathe with Industrial control, Electrical Control Box, Central Automatic Lubrication System, LM Guides for X & Z Axes, 8 Station Programmable Turret, Flood Coolant System of Capacity 100 Litre, 165mm - 3 Jaw S.C. Chuck • Number of production axis: 2 axis • Programmable turret: 8 position • The machine should be built on grey cast iron base with integrated coolant tank. • It should have an industrial CNC control system • It should feature hydraulic Chuck and manual tailstock, removable chip tray. • It should have an automatic lubrication system and adjustable flood coolant system Chuck Size mm 165 Chuck Type Manual /Hydraulic Maximum turning Diameter mm 200 Maximum turning Length mm 300 Bed type 45 deg Slant bed No. of axes no 2 Swing over way covers / carriage mm 410 Swing over cross slide mm 160	

		Swing over bed	mm	528	
		Distance between centers	mm	380	
		Height of center from floor		1060	
		Positioning Accuracy	mm	0.01	
		Repeatability	mm	±0.005	
		Spindle nose taper		A2-5	
		Bore through spindle	mm	52	
		Bar stock Dia for Manual chuck		51	
		Bar stock Dia for Pnu / Hyd chuck		38	
		Spindle Bearing Front Inner Dia	mm	80	
		Spindle Bearing Front Outer Dia	mm	125	
		Spindle Bearing Rear Inner Dia	mm	70	
		Spindle Bearing Rear Outer Dia	mm	110	
		Programmable spindle speed	rpm	150 – 6000	
		Control system		SIEMENS	
		Tool cross section		20x20	
		No. of Station	no	10 (BTP 63)	
		Boring bar size(capacity)	mm	32	
		X- axis travel	mm	140	
		Z - axis Travel	mm	380	
		Ball Screw X / Z	mm	Ø32 x 10 - C3 Class	
		Programmable feed rate	mm/min	0-10000	
		Rapid feed rate	mm/min	30000	
		Axis motor X / Z Type		AC SERVO MOTOR	
		Axis motor X / Z Torque	Nm	Siemens 6	
		Axis motor X / Z Power	kW	Siemens 1.74	
		Slides		Linear Motion Guide ways	
		Tailstock base travel	mm	190	

		Tail stroke Quill Stroke mm 100 Quill Diameter mm 80 Tail stroke Taper MT-4 Main supply (±10 %) 415V, 3 Ph., 50 Hz L x W x H mm 2300x1600x1900 Weight (approx) Kgs 2400 Should be supplied with the following tools : Set of 5 external turning carbide tool holders with inserts as described below Turning & Facing Tool holder no. 1 Copy Turning Tool Holder (LH, RH, N) nos. 3 (each 1no.) Threading Tool Holder no. 1 Set of 3 Internal boring carbide tool holders with inserts as described below Boring bars nos. 2 Internal threading no. 1 Centre drill dia shank dia 8mm no. 1 Twist Drill dia 6,8,16 & 12mm nos. 4 (each 1 no.) Should be supplied with windows based software designed to give complete solution for CNC programming (Design, Teach, Write and Simulation). This software acts as a tool which satisfies the need for designing of CAD model, Writing of CNC codes and also executing the simulation of the model. In addition this software also possesses the ability to execute both in online/offline modes.	

		Easy to use design package. This software should have Importing tool which supports Cad packages with DXF or HPGL interface. It should have the following features Simple "Drag and use" tools Onscreen co-ordinates display unit with grid functions Consists of various modes Draw, Edit, Design, CNCInspect Drawing mode with all basic sketch tools in addition to multifunction tools Multifunction tools such as Pattern tools, Modify tools, Tangential, Scaling tools etc., 2D / 3D representation of geometry's. Window bars with Select Geometry and order geometry values, Built in Tool functions with multipurpose / variant tool selection Navigation tabs available to switch between tabs during creation. The software should feature a special educational module for the basic beginners learning CNC programs covering all the cycles. It should also feature a programming tool for creating part program from basic to advanced levels, offering a user-friendly selection window with list of G and M codes for writing CNC part programs quickly and easily with flexibility to directly enter each word of the CNC block as the code is added to the CNC editor.	
AEE 2	CNC Milling Machine	CNC vertical milling machine designed specifically for industrial specifications.	

		It should be a precision milling machine totally enclosed high visibility sliding guard. It should use industrial controls such as SIEMENS. The machine should be provided with widely placed precision LM guide ways for increased rigidity and high accuracy The castings should be internally reinforced with heavy ribs to resist flex and damp vibrations. The machine should be equipped with cartridge type spindle power with 20 tool arm type ATC, integrated base with coolant tank X axis mm 480 y axis mm 360 Z axis mm 500 Table size mm 600 x 350 T- Slot mm 3 x 14 x 100 Load on table Kgs 250 Spindle — Direct Drive, Cartridge Type Spindle nose to table top mm 120 - 620 Spindle to Column mm 410 Spindle nose taper — BT 40 Spindle motor capacity Kw — Siemens Continuous Rating 7 Kw / 15 minutes rated output 9Kw Programmable spindle speed rpm — Siemens 10 - 6000 Spindle Bearing Front mm — Outer Dia: 95mm Inner Dia: 60mm Spindle Bearing Rear mm — Outer Dia: 95mm Inner Dia: 60mm	

		Control system		SIEMENS 828D Basic SL	
		Progammable feed rate	mm/min	0 - 6000	
		Rapid feed	m/min	40	
		Positioning accuracy	mm	0.010	
		Repeatability	mm	± 0.005	
		Slides		Linear motion guide ways	
		Ball screws	type	32mm & 10mm C3 Class	
		Axis motor		AC SERVO	
		Axis motor capacity	Nm	7	
		Main supply		415V±2% 50 Hz and 15A, 3 Phase (Customer to specify with order)	
		L x W x H with ATC (approx.)	mm	1900 x 2400 x 2550	
		Weight (approx)	Kgs	3000	
		Fully packed L x W x H without ATC (approx.)	mm	1975 x 2475 x 2400	
		Fully packed L x W x H with ATC (approx.)	mm	1975 x 2475 x 2850	
		Weight (approx)	Kgs	3300	
		Capacity	Ltrs	100	
		Coolant motor	Kw	1	
		Lubrication		Automatic lubrication system	
		Compatability / Upgradable		FMS / CIM system	
		Tool shank	type	BT 40	

		No of tool	no	20 tools Arm type	
		Actuation type		Motorized	
		Maximum tool dia	dia	80	
		Maximum tool length	mm	250	
		Max tool weight	Kgs	6	
		Supplied with the following:			
		A) COLLET CHUCK HOLDER			
		RD 16-BT40 COLLET CHUCK HOLDER		2 NOS	
		RD 25-BT40 COLLET CHUCK HOLDER		3 NOS	
		BT40 SHELL END MILL ADAPTOR 16MM		1 NO	
		B) COLLET			
		RD 16 COLLETS(2mm to 10mm)		1SET	
		RD 25 COLLETS(4mm to 16mm)		1SET	
		TAP Collet RD16(5x4mm, 6x4.9mm or 6x4.5mm, 8x6.2mm)		1SET	
		TAP Collet RD25(10x8mm, 12x9mm)			
		C) CUTTER			
		HSS SHELL END MILL SHANK DIA.40MM, CUTTER WITH DIA.16MM BORE		1 NO	
		D) DRILL AND TAP			
		TAPE M5,M6,M8,M10,		1 SET	
		TWIST DRILL DIA. 4.2MM, 5MM, 6.8MM, 8.5MM,		1 SET	

		E) BORING BAR HOLDER AND INSERT BORING BAR DIA. 10MM 1 NO BORING BAR INSERT 1 NO F) SLOT DRILL, END MILL AND BALL NOSE END MILL HSS SLOT DRILL DIA. 12MM 1 NO HSS END MILL DIA. 12MM 1 NO CHAMPER CUTTER 45DEG 1 NO G) CENTRE DRILL SHANK DIA. 8MM TIP dIA 2 MM 1 NO H) TOOL CLAMPING FIXTURE 1 NO Should be supplied with windows-based software designed to give complete solution for CNC programming (Design, Teach, Write and Simulation). This software acts as a tool which satisfies the need for designing of CAD model, Writing of CNC codes and also executing the simulation of the model. In addition, this software also possesses the ability to execute both in online/offline modes. Easy to use design package. This software should have Importing tool which supports Cad packages with DXF or HPGL interface. It should have the following features Simple "Drag and use" tools Onscreen co-ordinates display unit with grid functions Consists of various modes Draw, Edit, Design, CNC Inspect Drawing mode with all basic sketch tools in addition to multifunction tools	

		Multifunction tools such as Pattern tools, Modify tools, Tangential, Scaling tools etc., 2D / 3D representation of geometry's. Window bars with Select Geometry and order geometry values, Built in Tool functions with multipurpose / variant tool selection Navigation tabs available to switch between tabs during creation. The software should feature a special educational module for the basic beginners learning CNC programs covering all the cycles. It should also feature a programming tool for creating part program from basic to advanced levels, offering a user-friendly selection window with list of G and M codes for writing CNC part programs quickly and easily with flexibility to directly enter each word of the CNC block as the code is added to the CNC editor.	
AEE 3	Universal Milling Machine	[1] Universal milling machine, type. [2] The frame and base are made of high-quality cast iron strong and [3] The machine must be manufactured and must have manufacturer's accuracy test certificate according to ISO or JIS or DIN or BS. [4] Working table min. 1200x280 mm. [5] With min. 3 T-slot and 14 mm. width each approximately. [6] Power motor min. 3.7 Kw./380V./3phase/50Hz. [7] Automatic and manual longitudinal travel min. 880 mm. [8] Automatic and manual vertical travel min. 400 mm. [9] Automatic and manual cross travel min. 250 mm. [10] Complete with automatic feed for all axis by gear. [11] Taper size of vertical spindle ISO40. [12] Taper size of horizontal spindle ISO 40.	

		[13] Swiveling of working table at left/right min. 45 degrees. [14] Swiveling of spindle head at left/right min. 45 degrees. [15] Spindle speed gear type change min. 10 steps or variable speed type. [16] Minimum spindle speed not more than 60 rpm. and maximum spindle speed not less than 1,400 rpm. [17] Machine must be equipped with metric scale. [18] Coolant systems. [19] 1 set of steel clamping kit (not less than 45 pieces). [20] Swiveling machine vise turn 360 degree, clamping width min. 200 mm. [21] 1 set of dividing head (40:1) complete with tail-stock. [22] 1 set of circular table (120:1) 250 mm diameter. [23] 1 set of quick change holder NT40 or ISO40. [24] 1 set of quick change multi-lock milling chuck NT40. [25] 1 set of straight collet chuck 22 mm. diameter complete with collet size 6,8,10,12,16 and 20. [26] 1 set of quick change face mill arbor 25.4 mm. diameter NT40 or ISO40. [27] 1 set of quick change drill chuck arbor NT40 or ISO40. [28] 1 set of face mill diameter 80 mm. and inside diameter 25.4 mm. Can be hold 4 cutting tool not less than 4 pieces with spare carbide tip 10 pieces. [29] 1 set of horizontal milling arbor ISO 40 (O 25.4 mm.) [30] 1 set of splash guard. [31] 1 set of quick change boring system ISO40. [32] 1 set of parallel steel. [33] 1 set of leveling block. [34] 1 set of machine lighting.	

		[35] 1 set of standard service tool. [36] Complete with 3 axis digital readout system and resolution 0.005 mm. [37] 1 set of vibration support.	
AEE 4	Lathe Machine	- Automatic lathe machine Overall maximum dimensions of machine: - Horizontal Spindle; Maximum work diameter 460mm; - Maximum distance between centres680 mm; Maximum work length 710mm; - Speed range of cutter spindle: - 160 to 2500 rpm; - Z acis feed range: 0.315 to 1,7mm/R; - Tailstock taper : T4 - Metric tapping 0.1 mm to 14 mm Accessories: Centers (revolving dead center, a micro-set adjustable dead center, a self-driving live center; Lathe dogs (standard bent tail, straight tail, safety clamp and clamp type; Three Jaw universal geared scroll chuck and a four-jaw independent chuck; Collets: 295 No. ; Fingers: 150 No. Cutting tools: Tool-holders:- Mechanically held carbide tools, Clamped insert lathe tools Left-hand offset, Right-hand offset, straight, carbide; General-purpose lathe tool-bit with various lake angles (-150 to 00 to +350); Cut-off tools, Thread cutting tools. Knurling tools: A set of tapes (three: Fine, medium and coarse). Functions: Turning, cutting-off, internal and external threads cutting and drilling.	
AEE 5	Radial Drilling Machine	- Special CAM operated head clamping - Quill balancing Auto-feed enabled by electromagnetic chuck - Hardened gears for both speed and feed gear box - Drilling Capacity In Steel 63mm,;	

		- Drilling Capacity In Cast 75mm; - Boring Capacity In Steel 100mm; - Min. / Max. distance between spindle & column 350 / 1600 - Radial Arm Swivel 0-360 Degrees; - Number of spindle feeds 6 - Range of Spindle feeds0.09 to 1.20 mm/rev - Range of Spindle speeds 36 to 1796 rpm Supplied with accessories: Drill Holder Brackets, Twist Drills: High speed steel with straight and tapered shanks drills (high helix drill, core drill, oil hole drill, straight-fluted drill, deep hole or gun drill, spade drill, and Step drill, and saw-type hole cutter; Single point boring tool; Center drills regular and bell type; Reamers: rose, carbide-tipped, shell, adjustable and expansion-type reamers; Machine Taps: Gun, Stub flute and spiral flute each type supplied in sets of three; fluteless tap; countersinks; All to be supplied with the respective accessories such as drill jig chucks, guide plate and spacers. Functions for: machining holes and cutting internal thread.	
AEE 6	Power Saws, Band, Horizontal	- Hyd-Mechanical Automatic Horizontal Band saw, Mdl. S-20A, MTA-100 PLC Digital Programmable Control, Bundling Attachment, Swivel Mitering Work Head, Hydraulic Vises, Coolant; - Blade speed: 2 m/min to 10 m/min; Max work load: 2250 Kg - Capacity: Blade Width: 32 mm; Thickness: 8 mm Band Saw 16"x18";Rect-Cap (W): 18" / 457.2 mm; Rect-Cap (H): 16" / 406.4 mm; Rounds-Cap: 18" / 457.2 mm; Square-Cap: 16" / 406.4 mm; - Power: 7.5 hp / 5.6 kW; 220/440 V AC - Over all Dimensions: (W x D x H): 85" x 116" x	

		58"; Max. weight: 1800 Kg Functions: For cutting-off of metal plates and rods beam and blooms	
AEE 7	Welding Training Set	[1] A manual welding simulation trainer (educational system) on butt and corner joints for MMAW (Manual Metal Arc Welding), SMAW, FCAW, GTAW TIG, MIG and MAG welding processes. The purpose is to familiarize trainee the basic skills before going to the real practice [2] 1-set each welding heads for practical training on MMAW, MIG, and TIG [3] With monitor screen and Video glasses having High Resolution LCD 640x480. [4] In cludingthermoprinter with printing paper [5] Faults and defects can be reported through monitor screen and can be printed out [6] Electrical supply: 220 V, 50 Hz, 1 phase [7] With welding helmet set including audio system [8] 2-rolls of printing paper min. [9] Completed with all accessories to be ready for use	
AEE 9	Spot Welding Machine	[1] The resistance welding process in spot welding floor type by foot operated control, minimum capacity 15 KVA. Technical specification [2] Electricity supply AC. 220/380 Volt/3 Phase/50 Hz, fitted with groundleage cable. [3] Water cooled. [4] Ability to spot mildsteel, galvanized sheet and stainless steel at minimum thickness 1.2 + 1.2 mm. [5] Minimum throat depth 250 mm [6]By mechanism pressing.	

		[7] Adjustable current range not less than 5 ranges or equivalent system [10] Having automatic timing control and magnetic control. [11] Electrode arm has hole for clamping electrode holder in vertical and slope line. [12] Having minimum 3 sets of electrode (Straight, slope and elbow head.) [13] Water receiver for cooling by motor pump, electrical supply 220 Volt single phase 50 Hz. Accessories [14] Tool box with tools 1 set.	
AEE 10	MIG welding machine 250 amp	[1] The constant voltage MIG welding machine, complete with wire feeder unit and switch controlling flowing of shielding gas. Consist of moving parts which convenient and safety as welding. Technical specification [2] Maximum welding current not less than 240 Amp. [3] Minimum 100% duty cycle at 180 Amp. [4] Electricity supply AC. 220/380 Volt 3 phase 50 Hz. [5] Consist of spot welding accessories. [6] Having gas flow solenoid valve. [7] Built in ON-OFF switch. [8] Double wire feeder for aluminum wire, diameter 0.8-1.2 mm. [9] Welding gun 300 Amp., air-cooled and complete fitted with ON-OFF switch as semi-automatic or automatic at holder, 3 metre air-cooled hose assembly with swaged welding gun. Accessories [10] Having carriage for all parts with a bracket for CO2, Argon cylinder on solid rubber wheels.1 set. [11] Return cable made of multi stranded high grade copper cross section 50 mm2 as AS, BS, VDE standard (quantity of copper wire	

		1,558/0.2 pieces) complete with brass ground clamp, 300 Amp min. length 5 metre 1 piece. [12] Having 3 core rubble-sheathed flexible primary cable, cross section 6 mm2, 4 metre long. [13] Included CO2 cylinder minimum flow rate 0-30 litre/min. with heater 1 set. [14] Having guide conduit for steel welding and aluminum welding 1 set of each. [15] Welder's hand shield and helmet made of super tuff nylon, complete with clear and filter glass. 1 set. [16] Steel wire reel diameter 0.8 mm. capacity 15 Kg. 1 pack. [17] Aluminum wire reel diameter 1.2 mm. capacity 1 pack. [18] Welder's apron and arm protection 1 set. [19] Contact tip diameter 0.8, 0.9, 1.0, 1.2 mm., 5 of each. [20] Welding gloves for MIG (gauntlet) 1 pair. [21] Stainless wire brush. 2 pieces. [22] Spray torch cleaner 2 sets. [23] Stainless wire reel diameter 0.8 mm. 1 reel. [24] Spirally wound wire guide for steel and aluminum 1 set of each.	
AEE 11	TIG welding machine 250 amp	[1] AC/DC TIG welding machine thyrister control or Electronic control. Especially designed for TIG welding, having gas shield control and water cooling in welding gun, fitted with solid rubber wheels which conveniently move and safety. Complete with welding accessories. Technical specification [2] Maximum welding current not less than 250 Amp. [3] Minimum duty cycle 40% at 250 Amp. [4] Electricity supply AC 220/380 Volt 50 Hz. [5] Open circuit voltage minimum 70 Volt. [6] Consist of power factor correction.	

		[7] Current adjusting by continuous current control or 2 ranges continuous current control. Average lowest and highest current 10-250 Amp. [8] Having solenoid valve for gas or water, or other accessories that can be insteaded efficiently. [9] Having pre flow time or post flow time of gas flow rate. Accessories [10] Consist of mobile on solid rubber wheels and gas cylinder rack with securing chain. [11] Fitted with water cooled and on-off switch in electrode holder which ready to use. Minimum cable length 3 metre. [12] Having waterproof on-off and amperage control pendant include cable [13] The return cable is made of multi stranded high grade copper core, minimum cross section 50 mm2 as AS, BS, VDE standard (copper wire about 1558/0.2 pieces) complete with cable eye and ground clamp made of bronze, minimum 5 metre long. [14] With cable 4 metre, 3 core, 6 mm2 connected to primary pole. [15] Complete with ceramic nozzle size 6.35, 9.5, 12.7 mm. 4 pieces of each. [16] Having tungsten electrode consist of [17] Pure tungsten size 1.5, 2.4, 3.2 mm. 4 pieces of each. [18] Thoriated tungsten size 1.5, 2.4, 3.2 mm. 4 pieces of each. [19] Having tungsten electrode chuck size 1.5, 2.4, 3.2. 2 sets of each. [20] Argon gas cylinder 40 litre which full filled. [21] Argon regulator flow meter 1 set. [22] Welder's helmet made of supper tuff nylon and also welder's handshield, complete with filter glass, spare glass No.11. 10 pieces. [23] Set of apron and arm and wrist protection, 1 set of each.	

		[24] Welding gloves for TIG (gaunlet gloves) 2 pairs. [25] Stainless wire brush. Other details [26] Consist of circulation water pump and storage tank which connected to TIG welding 1 set and also on-off switch fitted. capacity 15 litre	
AEE 12	Gas metal arc welding (GMAW), /metal inert gas (MIG) welding / metal active gas (MAG) welding	- Wire feeders with feed rates range: 2 to 30.5 m/min; - Shielding gases: Argon, Helium, nitrogen, CO2, H2 or their mixture, - Supply415 ± 10%; Phase:3; Torch Frequency: 50 Hz; - Load: 9.5 KVA; OCV (DC): 22-46 V; - Output (Min./Max.) 60/250 A; Output Steps: 16; Control Circuit – 24V; Torch AK-25P; - Input Voltage: 230VAC @ 20 Amps - Output Power: 30-160 Amps - Duty-Cycle: 130 Amps @ 30% - Wire Sizes: .023"-.045" / 4" or 8" Diameter Spools - Flux Cored - Mild Steel – Aluminum - Max. Dimensions: 10.8" W x 18.5" D x 14.0" H - Motor: Permanent Magnet; Connector: PM-3; - Weight: 143 Kg Accessories: MB15A industrial style MIG gun with connect cable assembly, HD-work clamp w/ 10' welding cable, brass gas regulator & hose, mild steel and flux core welding wire and complete operator instruction manual. Function: Capable of welding mild steel from 24GA to 1/4" with .023" - .045" diamater wire. For precision welding of all types of steels	
AEE 13	Universal Testing Machine	- Maximum load 100 KN. - Manually operated	

		- Tensile Test clearance up to at least 700 mm - Ram Stroke: 100mm; - Straining/piston speed at load - Dimensions: 2030 x 750 x 1960 - Instrumentation for digital measurements of load. Digital extension readant to be available. - Hydraulic Loading and Hydraulic Control Console - Electronic Interface. - Configured for Tensile, Compression Transverse, shear - Variety of Graphs and Report printing. - Hydraulic Power Pack - Flow Control Valves to smoothly control the rate of loading. - Moving machine table which with hydraulic ram - Chain and sprocket mechanism with geared motor to control movement of middle crosshead - Upper Crosshead connected to machine table through plane columns. - Main screws for adjusting and controlling position of middle crosshead.	
AEE 14	Torsion Testing Machine	- Torque capacity 60 Nm. - Direct reading of torque and strain on dial indicator. Torsion Testing Machine designed for checking - Torsional property of steel samples - Possibility to adjust torque ranges - Power Supply: Three phase, 415V - Allows the application of torsional loading (torque) to a model section and display the corresponding angle of twist of the test specimen of different materials	
AEE 15	Ultrasonic Flaw Detector		

		This unit has a variable square wave pulser to optimise the performance of transducers. Probe sensitivity is increased by pulse width variation. [1] Bench mounted unit. [2] Bright electro-luminescent display. [3] Frequency range 5 bands 1MHz to 35 MHz. [4] Test modes pulse echo and transmit/receive. [5] Update rate 60Hz. [6] 5 Measurement modes. [7] Selectable damping. [8] Continuously variable probe zero. [9] Test range 1 to 20000mm at steel velocity. [10] Gain 0 to 110dB. [11] Panel memory 20 stored calibrations. [12] Thickness logging 2000 storage readings. [13] RS232 interface. [14] Battery operation/Mains operation power pack. [15] Transducer sockets BNC or LEMO. [16] Aluminum Carry case. [17] Operating temperature-10 to 55 degree C. Transducer [18] 4.3 MHz crystal single angle medium damped. [19] 2.25 MHz crystal single angle medium damped. [20] 5 MHz 2 x 8 x 4 crystal twin contact medium damped. [21] 2.25 MHz 2 x 8 x 4 crystal twin contact medium damped. [22] 1.25 MHz 2 x 8 x 4 crystal twin contact medium damped. [23] 10 MHz 10mm dia. crystal single contact medium damped. [24] 2,25 MHz 10mm dia. crystal single contact high damped. [25] 5 MHz 10mm dia. crystal single contact high damped. [26] Single probe cable 2 metres.	

		[27] Twin probe cable 2 metres. [28] Printer cable. [29] PC cable. [30] Calibration block welding. [31] Storage and recall software	
AEE 16	Auto Collimator	Electronic Autocollimator for Measurement of straightness, flatness, squareness of machine tables, cast iron and granite surface plates / tables. High accuracy and stability over a range of applications. Digital autocollimator controlled using a tablet PC with clear touch-screen software. Should come with a laser sighting aid. Should include specific applications software which allows advanced measurement, calculation and analysis of straightness, squareness, parallelism, flatness. Measurement range of around 1800 seconds Simultaneous dual axis operation and display Resolution: 0.2 arc sec	
AEE 17	Universal Profile Projector	- Magnifications : 10X, 25X & 50X - Capacity : Linear : 0 - 25 mm, Angular : 0 - 3600 - Resolution : Linear : 0.001mm, Angular : 1 min of arc Functions - Inspection of profiles, templates, precision measurement of length and angle.	
AEE 18	Angle Dekkor	- Angle dekkor having a two axis graticule - Micro optic and manual operated - Should be provided with darkfieldgraticule	

		- Allows to have a clear image from low reflectivity surfaces and from surfaces as small as 3mm. - Direct Reading to 60 secs over a measuring range of 60 x 60 mins using eyepiece graticule (supplied wiht mounting base)	
AEE 19	Desk Top Computers	- 2.66 GHZ 1500 GB S-ATA 300, 8 GB RAM DDR3, - 650GB Hard Disk, ATI OR NVIDIA Graphics, - 17" Screen, Card HDMI/DVI/VGA Graphic Output FiberOptic Digital Audio Output, 5.1 ChannelSound, DVD Writer, Card Reader WithlicensedWindow Vista orWindow XP,	
AEE 20	Auto-CAD and Anti-virus softwares	Latest versión with group license for the fortysix (46) computers and three laptops	
AEE 21	Plotters	- Digital, - PrintSize: 210mm to 1189mmx 3810mm - PrintTechnology: DyeBasedImaging and PigmentBased UV with HP ThermalInk - PrintSpeed: Normal Quality: 4.2 m2/Hr at 300 DPI; BestQuality: 2.8 m2/Hr at 600 DPI - Resolution: 600 x 600 - Networking: 10/100 BaseTInternalPrint Server - Memory: 12 MB Standard (expandableto 68 MB) 64 MB RIP In EFI Box - PaperHandling: Media Types: Paper (coated, glossy), film (coated, glossy, backlitimaging), banners withTyvek, opaque vinyl. Media Handling: Sheet and Roll Feed, Take Up Reel. DocumentFinishing: AutomaticCutter. PaperHandlingAccessories: Media Spindle	

		- Misc. Features: Generate 31 squarefeet/hour in high-speed "Best/Photo" mode and 47 squarefeet/hour in high-speed "Normal/Productivity" mode. Twoink sets - dye-basedinksforhigh-speedphoto-qualityimages, pigmented UV inksforenhanced light-fastness. Fiery RIP 64 MB standard memory - Dimensions: 1100mm x 1500mm x 2800mm - Weight: Unit: 110 kg	
AEE 22	Printers Heavy Duty	- Digital, Fast, Easy-To-Use Wide-Format A3 Colour Laser PrinterFor Office Work-groups - Speed : Up to 27/28 ppm ltr/A4, full-colour&black-only First Page Out : Under 16 seconds - Resolution : 600 x 600 dpi with HP ImageREt 3600 - Processor : 533 MHz RISC - Memory (std/max): 160MB/544 MB - I/FACE : Bi-di parallelport, USB 1.1 port - Trays (in) : 1 x 100-sheet multipurposetray, 1 x 500-sheet tray - Trays (out) : 250-sheet face-down output bin - DutyCycle : 120,000 pages/month - Media Types : Plain, light, intermediate, heavy, extra heavy, glossy, heavy glossy, highglossimages, tough, recycled, envelopes, transparencies, labels, cardstock - PostScript PrinterDescription, native PDF printing FONTS : 80 intscalablefonts in PCL, 92 intscalablefonts in PostScript - OS : MS Win 98, Me, NT, 2000, XP, & Server 2003 (32 bit and 64 bit); Macintosh OS 9 and later - Size (LXWXH) : 577 x 704 x 640 mm; - Weight : 50 kg	

AEE 23	Light Crystal Display (LCD)/ Projector	- Anexcellentmultipurposewidescreen 1280x800 data projector, display standard XGA and HD 720p video in nativemode; - Maximum light rating2600 lumen; - Varied set of input connectorsincluding a digital DVI-I with HDCP - Fan noisefrom 35 to 29 dB; - ImageSize and Position: The 1.2x manual zoom lensis of averagelength. Itdelivers a 100" diagonal 16:10 imagefrom a throwdistance of 10.75 to 13 feet. - Can be elevatedbydropping and lockingthe single frontfoot, and therightrearfoot can be adjustedif horizontal leveling (with ±30° of keystonecorrection) - Connections: The LV-8215 can accommodateeithertwoanalog data signals, orone digital and oneanalogsignal, viaits single VGA and DVI-I (HDCP) connectors. - Both RS-232 and RJ-45 connectionsforsecuritymonitoring and networking. - Compatibility. Can connect a widerange of data and video sourcesfrom VGA to UXGA and from 480p to 1080i, and can use the Auto settingtoselecttheaspect ratio fortheimageormanually set itwithone of fivechoices: 4:3, 16:9, 15:9, 16:10, and Letterbox. - Blackboardmodes. NinePresetmodesthatchangebrightness and image color emphasis (six color temperaturechoices). - Remote Control and Menus - Audio facility: A 7-watt speaker islocatedontherightside of theprojectorwithvolumeadjustedeasilyfromtheremote control.	

		- LampLife: In normal mode, lamplifeisrated at a longerthanaverage 4,000 hours, and Eco mode can stretchthatto 5,000 hours. - Weight of 4.5Kg	
AEE 24	Software for all computers	- Drawing software for 100 computers - SOLIDWORKS group license	
AEE 25	Work Done by a Variable Force Apparatus	[1] Determines the work done by a vertical variable effort and compares it with the work done in lifting a load [2] The free-standing, bench-top unit consists of a suspension cord carrying a loaded trolley at its mid-span. The cord is clamped at one end, and tensioning effort applied vertically at the other end. [3] All pulleys feature ball bearings. [4] An instruction manual for student and lecturer provided. [5] Set of weights. [6] 1m ruler supplied [7] Dimensions and weights (excluding set of weights): 585 x 130 x 635 mm; 3.2 kg (approx)	
AEE 26	Gear Trains Apparatus	[1] Apparatus for assembling four spur gears in simple or compound BC01/6 Item Code Item Description / Specifications trains to find overall ratios [2] An additional rotating arm for simple epicyclic gearing [3] 40, 60, 80 and 100 tooth gears supplied [4] Self contained bench mounted unit [5] Base fitted with drawer to hold all gears, spacers and pins [6] An Instruction manual for student and lecturer provided. [7] Dimensions and Weights: 290 x 125 x 120 mm; 2.2 kg (approx)	

AEE 27	Crank and Connection Rod	[1] Self contained unit mounted on an A3 white melamine board. [2] The characteristics of the crank and correcting rod are clearly shown by its parts. [3] The principle component parts are made from amber coloured perspex, pivoted with hollow rivets. [4] Includes a manual for student and lecturer which provides applications of the mechanism and illustrates graphical constructions. [5] Dimensions and Weights: 480 x 350 x 30 mm; 1 kg (approx)	
AEE 28	Toggle with Single and Double Action	Self contained unit to enable evaluation of forces within a toggle mechanism. The characteristics of the toggle with single and double action are clearly shown by its parts. Should consist of two pairs of links to which load is applied by a hanger suspended from their connecting pivot. The horizontal reaction is measured by a spring balance. Provided with instruction sheet which explains the use of velocity diagrams to static problems by virtual motion. • Provided with set of weights and 1m ruler	
AEE 29	Cam and Follower Apparatus	To determine follower displacement against angular rotation of acam; hence derive velocity and acceleration diagrams and determinethe maximum acceleration of the follower; for a variety of cams andfollowers. Bench mounted unit consisting of main spindle for each cam and a dial gauge. Each cam is mounted on a central shaft and is free to rotate about this shaft. The cams are rotated by hand.	

		The angular position of the cam is shown on a protractor and a pointer, It allows the cams position through rotation to be recorded. A set of cams are supplied as standard along with a set of followers which run on the perimeter of each cam. Each cam can be easily changed and the angular and dial gauge readings are clear. Consists of: - Simple Harmonic Motion Cam, Uniform Motion Cam, Constant Acceleration Cam, Tangent Cam, Eccentric Cam - roller and knife-edge - Dial gauge: 25mm range, 0.01mm resolution 60mm diameter reading face. - Angular protractor scale with 360° range and 1° resolution Supplied with instruction manual for instructor and student, and all necessary assembly and operational tools for full operation	
AEE 30	Flywheel Apparatus	[1] Self contained. [2] Wall mounting includes a pointer to the periphery of the wheel [3] To demonstrate the Second law of motion and energy storage [4] Running in ball bearings. [5] A load hanger and cord supplied. [6] 250mm x 30mm steel flywheel with engraved line on periphery [7] Instruction manual for student and lecturer provided. [8] Stop watch supplied [9] Set of weights. [10] Dimensions and Weight (excluding set of weights): 215 x 280 x 250 mm ; 19 kg (approx)	

AEE 31	Wall Mounted Screw Jack	Bench-mounted apparatus base incorporating a turntable fitted with a metric square pitch screw jack thread. Supplied with a set of calibrated weights suspended from the load hanger Ø140mm turntable 20mm outside diameter thread 2.5mm thread pitch An instruction manual for student and lecturer is provided. Set of weights	
AEE 32	Mechanics / Machine Friction of Belts Apparatus	[1] Observes the relationship between the tensions in the two sides of a belt; assessess the differences between vee, rope and flat belts; determines coefficient of friction between pulley and the three belt sections; investigate the effect of angle of lap. [2] The wall mounted apparatus consists of a pulley, 3 belts and 2 load hangers. Pulley graduated in 15 degree intervals. [3] The aluminium alloy pulley of approx. 150mm diameter has machined grooves to suit the three belts. [4] The three belts are vee, rope and flat. [5] An Instruction manual for student and lecturer supplied. [6] Set of weights. [7] Dimensions and Weight (excluding set of weights): 230 x 150 x 280 mm, 10 kg (approx)	
AEE 33	Rope - Belt Friction Apparatus	[1] Determination of the coefficient of friction between a steel pulley and a cotton rope; investigate belt tensions; evaluate effects of different `V` angles in the pulley, and of different lap angles. [2] The wall mounted apparatus consists of a fixed pulley, a second interchangeable pulley and a loaded rope belt with 2 load hangers in	

		a complete loop. [3] Four pulleys with vee grooves typically of 60, 90, 120 degrees and flat rim supplied. [4] Alternative mounting positions provided to vary the lap angle. [5] An Instruction manual for student and lecturer provided. [6] Set of weights. [7] Dimensions and Weight (excluding set of weights): 250 x 150 x 370 mm, 19 kg (approx)	
AEE 34	Viscosity Measurement Apparatus	Apparatus to measure viscosity of oil Measuring range: 20 to 600.000 cP Speed : up to 60 rpm Precision: ±1%. Repeatability: 0.2%. Temperature range:- from 0 °C to 100 °C Power: max. 15W Supplied complete with: Set of spindles and Temperature probe	
AEE 35	Condition Monitoring Equipment	Apparatus designed to determine the friction torque in a plain journal bearing It consists of a steel shaft driven by a variable speed electric motor. The apparatus should allow to measure the temperature in the journal housing. The apparatus allows measurement of Friction torque by adding weights to a load hanger suspended from the damped torque arm. Allows the application of a steady load to the bearing of up to 650N. It is supplied with an electronic tachometer is provided for measurement of the shaft speed, which can be controlled using the control potentiometer on the front control box.	

		A full set of weights, hangers and tools is provided along with a comprehensive instruction manual for student and linstructor.	
AEE 36	Set of MEASURING TOOLS	Dial Caliper [1] With metric graduations [2] For inside, outside & depth measuring [3] Knife edge jaws, 38 mm dia. dial [4] Measuring faces, hardened and ground, rust resistant finish [5] Complete in fitted case [6] Measuring range: 0 to 150mm [7] Dial graduations: 0.02mm Engineers Square 1] Workshop grade [2] Blades to be hardened, tempered and precision ground [3] Blade length: 100 mm approx Ext. Micrometer 1] Metric graduation [2] Hardened & ground alloy spindle, with locknut [3] Ratchet or friction thimble [4] Rust resistant finish [5] Supplied in fitted case [6] Approx. Sizes (one of each): 0 to 25 mm, 25 to 50 mm, 50 to 75 mm, 75 to 100mm [7] Graduations 0.01 mm Measuring Tape [1] Flexible steel blade, steel case rust resistant finish [2] Calibrated in metric and inches [3] Length: 3 metres Scribber	

		[1] Single ended [2] Approximate length: 180mm Steel Rule [1] Stainless steel, non rusting [2] Calibrated in metric & inches [3] Length 300mm	
AEE 37	Vernier Caliper	[1] Knife edge jaws [2] Measuring faces hardened & ground [3] Rust resistant finish [4] Supplied in fitted case [5] Capacity: 0 to 150 mm [6] Graduated to: 0.05 mm	
AEE 38	Vernier HT. Gauge	[1] Metric & Inch graduations [2] Base, beam, sliding head & scriber hardened and lapped [3] Fitted with Locknut & fine adjusting screw [4] Anti-glare rust resistant finish [5] Flush fitting vernier [6] Complete in fitted case [7] Capacity from zero: 300mm x 0.2mm & 0.001 inch	
AEE 39	Measuring Tools Set	[1] Measuring equipment to be used for machining shop works. [2] Measuring tools set must be manufactured and AEEt accuracy according to ISO or JIS or DIN standard. [3] 10 PCS., VERNIER CALIPER: - 6 inch. / 150 mm. size - Accuracy of 1/128 inch. and 0.05 mm. - Used to measure outside/inside and depth dimensions. - Scale type with lock screw. - Made of stainless steel. [4] 10 PCS., VERNIER CALIPER: - 6 inch. / 150 mm. size	

		- Accuracy 0.001 inch. and 0.02 mm. - Used to measure outside/inside and depth dimensions. - Scale type with lock screw. - Made of stainless steel. [5] 2 SETS, DIAL VERNIER CALIPER: - 150 mm. size - Reading at dial with accuracy of 0.01 mm. A01B/26 [6] 2 SETS, DIGITAL VERNIER CALIPER: - 150 mm. size - Reading through LCD with accuracy of 0.01 mm. and 0.0005 inch. - Inch. or mm. measuring can be selectable [7] 1 SET, DIGITAL VERNIER CALIPER: - 300 mm. size. - Reading through LCD with accuracy 0.01 mm. and 0.0005 inch. - Inch. or mm. measuring can be selectable. [8] 5 SETS, OUTSIDE MICROMETER: - 0-25 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips - Ratchet stop type or friction drive type. - Lockable at any position. [9] 5 SETS, OUTSIDE MICROMETER: - 25-50 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Lockable at any position. [10] 5 SETS, OUTSIDE MICROMETER: - 50-75 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type.	

		- Lockable at any position. [11] 5 SETS, OUTSIDE MICROMETER: - 75-100 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Measuring error _0.003 mm. - Lockable at any position. [12] 1 SET, INSIDE MICROMETER: - 25-50 mm. size with accuracy of 0.01 mm. - High-grade steel measuring face - Ratchet stop type or friction drive type. - Lockable at any position [13] 1 SET, DEPTH MICROMETER: - 0-150 mm. size with accuracy of 0.01 mm. - Measuring spindle is harden and ground. - Base size is min. 100 mm. - Ratchet stop type or friction drive type. [14] 1 SET, UNIVERSAL BEVEL PROTECTOR: - A complete set of Universal Bevel Protector. - Protector head with magnifier lens, 12" blade. - Graduation 1° Dial, 5 min. Vernier. - Hardened stainless steel. [15] 10 SETS, SCREW PITCH GAUGE: - Set of metric screw pitch gauge size 0.4-0.7 mm. min. 21 pcs./set - Unified screw pitch gauge size 4-12 TPI min. 42 pcs./set and can be lockable. [16] 10 SETS, RADIUS GAUGE - Size 0.5-13 mm. (0.5 mm. stepped) - Furnished with 15 pcs./set.	

		[17] 1 SET, COMBINATION SQUARE: - Blades size 300 mm. - Square head 45° and 90° - Complete with center head and protractor head - Scale graduation 0.5 mm, 1 mm. [18] 1 SET, MORSE TAPER GAUGE: - Size of MT1, MT2, MT3 (Outside and Inside) [19] 1 SETt, GAUGE BLOCK - Made of steel alloy - Metric system, 32 pcs./set, quality grade zero, including certification. - Including with maintenance kit set [20] 1 SET, SINE BAR: - Size 150 mm. [21] 1 TOOL CABINETS - Steel cabinet size (approx) WxDxH = 90x45x75 cm. with 2 sliding glass door standard	
AEE 40	Misc. Hand Tools	Basic Hand Tools Set BIHEXAGON SOCKET SET [1] 26 pieces - metric sockets: 8,9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33 and 36 mm. [2] Hex bit sockets: 4, 5, 6, 7, 8, 10, 12, 14, 17 and 19 mm. [3] Philips sockets: 2, 3 and 4. [4] Spark plug sockets: M14 and M10. [5] Chrome molybdenum screwdriver bits: 9 and 14 chemically blacked. [6] Accessories: - Extension bars: 75, 125, 250 mm. - Universal-joint. - T-handle.	

		- Swivel handle and black rubber ratchet handle. [7] Robust fitted case with magnetic parts tray, security padlock and cushion grip handle. SCREW DRIVER SET [8] Handle material is exceptionally resistant to hydrocarbon and other oils. [9] Flanged tang molded inside handle. [10] Chrome plated vanadium steel. [11] Short blasted tip. [12] Tray or container. [13] Flared and parallel tips each of: No. Blade BladeBlade (piece) width thickness length (mm) (mm) (mm) 2 5.5 2 100 2 6.5 1.2 125 2 6.5 1.2 150 3 8.0 1.2 150 3 8.0 1.6 200 3 10.0 1.6 200 3 12.0 2.0 250 [14] Philips or pozidrive tips: No. Trip No. Blade Blade (piece) diameter length (mm) (mm) 2 PZ1 5.0 30 2 PZ2 6.0 30 2 PZ0 4.0 75 2 PZ1 5.0 75	

		2 PZ1 5.0 100 3 PZ2 6.0 125 3 PZ3 8.0 150 3 PZ4 9.9 200 * PZ = ISO code 2,380 and 4,757 [15] 3/8" square drive insert bit set (17 pieces) - It is a bit adapter set and can be used with socket accessories or torque wrenches. - House or container made of steel box and bits fitted with a form or plastic insert. - Bit set consists of: - Universal bit adapter. - Spinner handle. - 4 metrics hexagon bits, 3, 4, 5, 6 mm. - 5 A/F hexagon bits 3/32, 1/8, 5/32, 3/16, _ inches. - 3 long reach slotted screw insert bits 3, 4, 5.5 mm. - Container or box with cover. INSULTATED PLIERS SET [16] They are for electricians used. [17] High quality steel in good forging. [18] Hot forged for strength and durability. [19] Smooth action. [20] Anti-slip moulding handle. [21] Insulated handle. [22] Pliers set are supplied the same brand consisting of: - 5 multi-grip plier jaw or channel lock pliers. - 240 mm. long max. jaw opening more 45 mm. - Slip joint with more than 6 positions. - 5 combination pliers.	

		- Serrated jaw with cutting edge. - Max. wire cutting 1.6 mm. - 180 mm. long. - 5 snipe nose pliers or long nose pliers. - Taper straight nose with serrated jaw and side cutter. - Max. wire cutting 1.6 mm. - 200 mm. long. - 5 diagonal cutter pliers or side cutter pliers. - Fine sharpened for cutting copper wire. - Max. wire cutting 1.6 mm. - 160 mm. long. - 5 wire stripper pliers. - Spring release. - Adjustable screw with lock nut for repetition work. - Strip wire cap. 0.5 - 6 mm. - 160 mm. long. - 5 end cutter pliers. - Finely sharpened for cutting copper wire. - Max. wire 1.6 mm. - 160 mm. long (approx.). - Cantilever tool box. - 3 tier construction. - Double handle closing 5 compartments. HAMMER TOOL SET Steel Hammer [23] Drop forging hammer processing. [24] Wooden or fiberglass handles. [25] Hammer head fixing (wooden handle). [26] 1-ball pein hammer size 4 Oz. 270 mm. long 65 head width 18 head thick.	

		[27] 1-ball pein hammer size 16 Oz. 350 mm. long 100 head width 29 head thick. [28] 1-joiners warrington hammer No.0 size 8 Oz. 270 mm. long 105 head width 25 head thick. [29] Steel claw hammer (for nailing) size 16 Oz. 320 mm. long 130 head width 32 head thick. [30] Club hammer size 4 lbs. 240 mm. long 100 head width 42 head thick. Soft Face Hammer [31] 1-Copper/Copper hammer size 32 Oz. hammer No.1 face dia. 32, 280 mm. long. [32] 1-Nylon soft face hammer size 24 Oz. face dia. 38, length 300 mm. [33] 1-Rubber mallet size 24 Oz. head size 74x127 mm, length 380 mm. Cold chisels [34] 2-cold chisels blade width 10 mm. length 150 mm. [35] 2-cold chisels blade width 16 mm. length 200 mm. [36] 1-pinch bars blade width 25 mm. length 450 mm. Punches [37] 2-center punches trip O 6 mm. length 150 mm. [38] 2-taper punches trip O 6 mm. length 150 mm. [39] 2-automatic center punch - Pushing the end cap cause a spring to release for impact action. - Impact is adjusted by rotation of the knurl. - Trip O 6 mm. length 140 mm. [40] Hacksaw 2 sets. - Light weight construction resistant to oxidising. - Unique design giving increased blade tension. - Front hand rest.	

		- Hand guard protection. - Die cast Aluminum handle and square section frame. - Cantilever blade adjustment. - Blade length 300 mm. standard size. - 24 blades for 18 TPI (Teeth per Inch) HSS. - 24 blades for 24 TPI HSS. [41] Files with handles. - 2-half round files 200 mm. long. - 2-round files 200 mm. long. - 2-flat files (corse) 200 mm. long. - 2-flat files (fine) 200 mm. long. - 2-square files 200 mm. long. [42] Pullers They are suitable for moving gears bearings sprockets and pulleys which be strong gripping and made of drop forged from high quality steel and heat treated. - Twin and tripple leg pullers. - Internal and external used. - 1-twin leg puller spread 150 mm. reach 80 mm. - 1-twin + triple leg spread 200 mm. reach 140 mm. - 1-bearing puller kit. - Bearing separators fit behind bearing where puller jaw cannot enter. - All kits supplied in a metal case. - kit content: - Bearing separator 35 - 140 mm. capacity used with 2-leg puller. - Beam, screw, thrust nut and thrust race. - Main rods, nuts and washers (2). - 125 mm. extension rods (2)	

		- Extension rods (4) - Separated. [43] Lock grip plier. It is serrated curved jaws with power full locking mechanism and quick release lever and froged jaws are harded, high quality housing. - 2-curves jaw lock grip pliers 190 mm. length 42 mm. jaw capacity. - 2-curves jaw lock grip pliers 235 mm. length 63 mm. jaw capacity. - 2-straight jaw lock grip pliers 190 mm. long 42 mm. jaw capacity 235 mm. long 63 mm. jaw capacity. [44] 6 wires crimpers. - Color coded crimping. - Screw shear cuts terminal screw. - Crimp ignition wire cutter. - General purpose wire cutter. - Wire stripping range 0.70 to 6 mm. O wire. - Rubber insulated handle. [45] A 5-drawer roller cabinet. - Heavy duty plate side handles. - Ball bearing slides. - 5-drawers with sliding rail with key. - Drawer dimension width depth height (mm.) (mm.) (mm.) - 2 drawers (with 580 410 52 9 compartments) - 2 drawers 580 410 100 - 1 drawer 580 410 160 - 2 swivels and 2 fixed castors dia. 125 mm.	

		- Top can be mounted to form 25 mm. deep tray reversed to provide a smooth for work table.	
AEE 41	Anvil With Stand	[1] Function: for use in workshop [2] All steel construction, heavy cast iron stand [3] 600mm length [4] 300mm overall width of base [5] Weight 50kg approx.	
AEE 42	Figure Stamp Set	[1] Function: for use in workshop [2] Figures 0 to 9 height 5mm [3] In plastic or sheet metal box	
AEE 43	Bench Vice	[1] Drop forged steel [2] Width of Jaw 120mm [3] Opening 140mm, quick release [4] One pair detachable Copper or lead grips [5] One pair detachable fibre grip	
AEE 44	Pipe Wrench	[1] Function: for use in workshop [2] Drop forged steel [3] Crescent type, heavy duty [4] Steel handle with spring & adjusting nut [5] For nuts up to 2 inches	
AEE 45	Open Ended Wrench Set	[1] Function: for use in workshop [2] Metric graduation [3] Regular head 15 deg angle jaw [4] Set of 8, sizes 8 to 27mm [5] Made in chrome vandium steel	
AEE 46	Vice Grip Pliers	[1] Function: for use in workshop [2] Forged alloy steel jaw [3] Pressed steel body [4] Rust resistant finish	

		[5] Lock & quick release lever [6] Approx 175mm Length [7] Capacity 32mm	
AEE 47	Screwdrivers	[1] Function: for use in workshop [2] Set of 4 chrome vanadium steel [3] Hammer proof plastic handles [4] Approx mm sizes - 3x70 length 140mm - 4x90 length 160mm - 6x130 length 220mm - 8x170 length 320mm	
AEE 48	Hacksaw	[1] Function: for use in workshop [2] Adjustable tubular metal frame [3] Shaped handle, blade 250-300mm [4] With qty 50, 18 TPI spare blades	
AEE 49	Tool Box	[1] Function: for use in workshop [2] Steel type, with two trays [3] Handles & locking catch for pad lock. [4] Approx size: 175x200x500mm	
AEE 50	Blow Lamp	[1] Function: for use in workshop [2] Fuel: petrol or paraffin [3] Capacity 0.75 to 1 litre [4] Fitted with evercool handle [5] Saftey devices [6] Automatic cleaning needle	
AEE 51	Soldering Iron	[1] Function: for use in workshop [2] Copper, non electric [3] Straight with diamond tip [4] Wooden handle, weight 450gr.	
AEE 52	Punch & Chisel Set	[1] Function: for use in workshop	

		[2] 12 piece set [3] In wooden or metal holder [4] Approx Specification: - 1/4 inch cape chisel - 5/16" cape chisel round nose - 3/8" diamond point chisel - 1/4" cold chisel - center punch - solid punch - drift punch - 5/8" cold chisel - 1/8" pin punch - 5/32" pin punch	
AEE 53	Tap & Die Set, Metric Small	[1] Function: for use in workshop [2] HSS set of 7, circular split pattern [3] To contain taper, 2nd, & bottoming taps, dies, die stocks & tap wrenches [4] Supplied with fitted case [5] Metric sizes: 6, 7, 8, 9, 10, 11 & 12mm	
AEE 54	Tap & Die Set, Metric Large	[1] Function: for use in workshop [2] HSS, Set of 6, circular split pattern [3] To contain taper, 2nd, & bottoming taps, dies, diestocks & tap wrenches [4] Supplied in fitted case [5] Metric sizes: 14, 16, 18, 20, 22 & 24mm	
AEE 55	Tap & Die Set, Bsw	[1] Function: for use in workshop [2] HSS, set of 7, circular split pattern [3]To contain taper, 2nd & bottoming taps, dies, diestocks & tap wrenches [4] Supplied in fitted case	

		[5] BSW sizes: 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4 inch BSW	
AEE 56	Wing Divider	Wing Divider [1] Function: For Use In Workshop [2] With Wing & Locking Screw [3] Fine Polished [4] Box Jointed [5] Suitable For All Metal Work [6] AEE – 63200mm Long	
AEE 57	Protractor	[1] Function: for use in workshop [2]85mm diameter made of steel [3] Graduated to 180 deg in both directions	
AEE 58	Universal Surface Gauge	[1] Function: for use in workshop [2] Hardened steel base [3] Surface ground with V-groove [4] Spindle length 250mm [5] With scriber, scriber clamp & spindle clamp.	
AEE 59	Plumb & Spirit Level	[1] Function: for use in workshop [2] Made of aluminium [3] With "rainbow" tubes 600mm.	
AEE 60	Riveting tools	Riveter [1] Function: general metalwork shop use. [2] For all standard "pop" rivits 3 to 5mm Rivet Set-Up Set [1] Function: for use in workshop [2] Made of hardened steel [3] For drawing up rivits before closing [4] In wooden stand [5] Set of 5 pieces for 4, 6, 8, 10 & 12 mm rivits	

AEE 61	Screwstarter Set	Screwstarter Set [1] For slotted screws w/ expanding twin bit headsthat fit inside screw to hold securely [2] Three (3) piece set has brass handles and accommodates0, 1, 2, 3, 4, 5, 6, 8, 10, 12 and 1/4 inch screws [3] Length: 6 inches Screwstarter Set [1] For cross point screws, w/ expanding split heads that hold screws securely [2] Three (3) piece set has brass handles and accommodates0, 1, 2, 3, 4, 5, 6, 8, 10, 12 and 1/4 inch screws [3] Length: 8 inches Combination Screwdriver Set [1] Straight blade screwdrivers: 3/16 x 6 1/2 inch; 1/4 x8 13/32 inch; 1/8 x 6 1/4 inch; and 11/64 x 13 1/4 inch [2] Phillips blade screwdrivers: #1 x 6 21/32 inch; #2 x8 13/32 inch; and #2 x 12 13/32 inch [3] Torx drivers: T15 x 7 7/32 inch and T20 x 7 7/32 inch [4] Pozi screwdrivers: #1 x 6 21/32 inch and #2 x 8 13/32inch Hand Tool - Screwdriver Set [1] With insulated transparent shaft and split proof handle, chrome vanadium round blade. Approx. sizes: 2.5 x 60 mm and 3 x 80 mm. [2] Chrome vanadium steel, nickel plated, parallel tip with plastic insulated blade and plastic handle. Approx. size: 4 x 100mm. [3] Chrome vanadium steel, nickel plated, with flared tip and plastic	

		handle. [4] Chrome vanadium steel, nickel plated, "chubby" type with flared tip and plastic handle. Approx. size: 6 x 25 mm. [5] For voltage testing, flat nose, plastic handle, insulated blade with neon light. Testing voltage: 110 to 440 V. Approx. size: 3 x 120mm [6] Phillips type, chrome vanadium steel, nickel plated with insulated split-proof handle. Approx. sizes: No. 1 x 75mm, No.2 x 100mm and No.3 x 150mm. Jewellers Screwdriver Set [1] Six parallel tip sizes 0.6 to 2.5mm and four crosshead tip sizes 1.5 to 3mm diameter. [2] Supplied in plastic wallet or box. A01B/37 Screwdriver [1] Power: 600W [2] Speed: 0-3560 rpm [3] Bit reception: 6mm [4] Working radius: 21mm [5] Metal gearbox [6] Depth setting nose [7] Belt clip [8] Weight: 1.5kg [9] Magnetic bit holder Phillips No2 [10] Qty 1 set, bits Screwdriver Set	

		[1] Insulation is injection molded on high grade vanadium steel blade and permanently attached to shock resistant plastic handle [2] Four (4) slotted drivers include 1/8 x 3, 1/8 x 4,3/16 x 5, and 1/4 x 6 inch and 3 Phillips drivers including #0 x 2 1/2, #1 x 3, and #2 x 4 inch Screwdriver Set [1] Twelve (12) piece Phillips/slotted set for general use [2] Phillips sizes: #0 x 2, 2 x 1 1/4, 1 x 3, 2 x 4, 1 x 6, and 1 x 10: Slotted sizes: 1/4 x 1 1/4, 3/32 x 2, and3/16 x 3, 1/4 x 4, 5/16 x 6, 1/8 x 8 Screwdriver, Assorted, Set of Six [1] Chrome vanadium steel, nickel plated, resin handles, standard pattern, set of six, approximate dimensions: 6mm x 1100mm 6mm x 100mm 5mm x 100mm 3mm x 90mm 3mm x 60mm 6mm x 50mm Screwdriver, Assorted, Set of Four [1] Chrome vanadium steel, nickel plated, resin handles, set of four approximate dimensions: [2] Flat, round shank, 150mm blade [3] Flat, round shank, 300mm blade [4] Phillips, 100mm blade [5] Phillips, 200mm blade Screwdriver, Cross Point, Phillips [1] For electronics workshop with insulated plastic handle. [2] Stubby types	

		[3] Sizes: 5x25 mm (No. 1) 5x40 mm (No. 1) 6x25 mm (No. 2) 6x40 mm (No. 2)	
AEE 62	Cabinet with Tools	[1] Type: Constructed of steel plate framing, upper and lower doors are sliding type. Upper and lower cabinets are equipped with masterkeys locks. Overall size is abt 1,700 mm[W] x 520 mm[D] x 1,840 mm[H] finished with long-lasting surface. Lower cabinet has six adjustable shelves with 8 large plastic tote trays [abt 480 mm[W] x 380 mm[D] x 105 mm[H]], 6 smaller plastic tote trays [abt 320 mm[W] x 200 mm[D] x 100 mm[H]] and 10 plastic trays[abt 335 mm[W] x 170 mm[D] x 105 mm[H]]. Tools equipment for automotive [2] 1 lb. lead hammer: 1 pc [3] Rubber mallet: 1 pc [4] 3 pc. flare nut wrench set: 1 set [5] 16 pc. puller tool panel, asst.: 1 pc [6] 11 pc. ignition wrench set: 1 set [7] 13 pc. comb. wrench sets: 2 sets [8] 15 pc. metric comb. wrench set: 1 set [9] Univ. spark plug sockets, 3/8 " drive, 5/8 socket: 2 pcs [10] Univ. spark plug sockets,3/8" drive, 13/16" socket: 2 pcs [11] 10 pc. metric hex key set: 1 set [12] 3/8" reversible ratchets: 3 pcs [13] 1/4" reversible ratchets: 2 pcs [14] 6 pc. screwdriver sets: 2 sets [15] 5 pc. phillips screwdriver set: 1 set [16] Brake shoe retaining spring tool: 1 pc	

		[17] Adj. battery terminal and post tool cleaners : 2 pcs [18] Battery side terminal cleaners: 2 pcs [19] Bearing race driver set: 1 set [20] Valve spring compressor tool: 1 pc [21] Brake spring tool: 1 pc [22] Starter snap ring tool: 1 pc [23] Tire gauges: 2 pcs [24] Pipe wrenches, 6": 2 pcs [25] Pipe wrenches, 10": 2 pcs	
AEE 63	Dial Gauge	[1] Dial & Bezel rotatable through 360 degrees for zero setting [2] Spindle, rack & pivot to be made of stainless steel [3] Contact point hardened & ground [4] With revolution counter [5] Supplied in fitted case [6] Range: 10 mm, Graduation: 0.01 mm, Reading: 0-50-0, Dial diameter: 60 mm approx [7] Magnetic base with 3 energised sides [8] Permanent magnet type with push button for on and off [9] Supplied with brackets and attachments and fitted case [10] Approximate dimensions: Size of base, 80x55x55 mm, Diameter of column, 25 mm	
AEE 64	Marking out tools	(a)20no. Engineers Square [1] Workshop grade [2] Blades to be hardened, tempered and precision ground [3] Blade length: 100 mm approx (b)12 no. Ext. Micrometer [1] Metric graduation [2] Hardened & ground alloy spindle, with locknut [3] Ratchet or friction thimble	

		[4] Rust resistant finish [5] Supplied in fitted case [6] Approx. Sizes (one of each): 0 to 25 mm, 25 to 50 mm, 50 to 75 mm, 75 to 100mm [7] Graduations 0.01 mm (c)12no. Measuring Tape [1] Flexible steel blade, steel case rust resistant finish [2] Calibrated in metric and inches [3] Length: 3 metres (d)2o no. Scriber [1] Single ended [2] Approximate length: 180mm (e)20no. Steel Rule 1] Stainless steel, non rusting [2] Calibrated in metric & inches [3] Length 300mm (g)2no. Vernier HT. Gauge [1] Metric & Inch graduations [2] Base, beam, sliding head & scriber hardened and lapped [3] Fitted with Locknut & fine adjusting [4] Anti-glare rust resistant finish [5] Flush fitting vernier [6] Complete in fitted case [7] Capacity from zero: 300mm x 0.2mm & 0.001 inch	

AEE 65	Measuring Tools Set	[1] Measuring equipment to be used for machining shop works. [2] Measuring tools set must be manufactured and AEEt accuracy according to ISO or JIS or DIN standard. [3] 10 PCS., VERNIER CALIPER: - 6 inch. / 150 mm. size - Accuracy of 1/128 inch. and 0.05 mm. - Used to measure outside/inside and depth dimensions. - Scale type with lock screw. - Made of stainless steel. [4] 10 PCS., VERNIER CALIPER: - 6 inch. / 150 mm. size - Accuracy 0.001 inch. and 0.02 mm. - Used to measure outside/inside and depth dimensions. - Scale type with lock screw. - Made of stainless steel. [5] 2 SETS, DIAL VERNIER CALIPER: - 150 mm. size - Reading at dial with accuracy of 0.01 mm. [6] 2 SETS, DIGITAL VERNIER CALIPER: - 150 mm. size - Reading through LCD with accuracy of 0.01 mm. and 0.0005 inch. - Inch. or mm. measuring can be selectable [7] 1 SET, DIGITAL VERNIER CALIPER: - 300 mm. size. - Reading through LCD with accuracy 0.01 mm. and 0.0005 inch. - Inch. or mm. measuring can be selectable. [8] 5 SETS, OUTSIDE MICROMETER: - 0-25 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips - Ratchet stop type or friction drive type.	

		- Lockable at any position. [9] 5 SETS, OUTSIDE MICROMETER: - 25-50 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Lockable at any position. [10] 5 SETS, OUTSIDE MICROMETER: - 50-75 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Lockable at any position. [11] 5 SETS, OUTSIDE MICROMETER: - 75-100 mm. size with accuracy 0.01 mm. - Measuring faces are carbide tips. - Ratchet stop type or friction drive type. - Measuring error _0.003 mm. - Lockable at any position. [12] 1 SET, INSIDE MICROMETER: - 25-50 mm. size with accuracy of 0.01 mm. - High-grade steel measuring face - Ratchet stop type or friction drive type. - Lockable at any position [13] 1 SET, DEPTH MICROMETER: - 0-150 mm. size with accuracy of 0.01 mm. - Measuring spindle is harden and ground. - Base size is min. 100 mm. - Ratchet stop type or friction drive type. [14] 1 SET, UNIVERSAL BEVEL PROTECTOR: - A complete set of Universal Bevel Protector. - Protector head with magnifier lens, 12" blade.	

		- Graduation 1° Dial, 5 min. Vernier. - Hardened stainless steel. [15] 10 SETS, SCREW PITCH GAUGE: - Set of metric screw pitch gauge size 0.4-0.7 mm. min. 21 pcs./set - Unified screw pitch gauge size 4-12 TPI min. 42 pcs./set and can be lockable. [16] 10 SETS, RADIUS GAUGE - Size 0.5-13 mm. (0.5 mm. stepped) - Furnished with 15 pcs./set. [17] 1 SET, COMBINATION SQUARE: - Blades size 300 mm. - Square head 45° and 90° - Complete with center head and protractor head - Scale graduation 0.5 mm, 1 mm. [18] 1 SET, MORSE TAPER GAUGE: - Size of MT1, MT2, MT3 (Outside and Inside) [19] 1 SETt, GAUGE BLOCK - Made of steel alloy - Metric system, 32 pcs./set, quality grade zero, including certification. - Including with maintenance kit set [20] 1 SET, SINE BAR: - Size 150 mm. Item Code Item Description / Specifications [21] 1 TOOL CABINETS - Steel cabinet size (approx) WxDxH = 90x45x75 cm. with 2 sliding glass door standard	
AEE 66	Basic Hand Tools Set	BIHEXAGON SOCKET SET	

		[1] 26 pieces - metric sockets: 8,9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33 and 36 mm. [2] Hex bit sockets: 4, 5, 6, 7, 8, 10, 12, 14, 17 and 19 mm. [3] Philips sockets: 2, 3 and 4. [4] Spark plug sockets: M14 and M10. [5] Chrome molybdenum screwdriver bits: 9 and 14 chemically blacked. [6] Accessories: - Extension bars: 75, 125, 250 mm. - Universal-joint. - T-handle. - Swivel handle and black rubber ratchet handle. [7] Robust fitted case with magnetic parts tray, security padlock and cushion grip handle. SCREW DRIVER SET [8] Handle material is exceptionally resistant to hydrocarbon and other oils. [9] Flanged tang molded inside handle. [10] Chrome plated vanadium steel. [11] Short blasted tip. [12] Tray or container. [13] Flared and parallel tips each of: No. Blade BladeBlade (piece) width thickness length (mm) (mm) (mm) 2 5.5 2 100 2 6.5 1.2 125 2 6.5 1.2 150 3 8.0 1.2 150	

		3 8.0 1.6 200 3 10.0 1.6 200 3 12.0 2.0 250 [14] Philips or pozidrive tips: No. Trip No. Blade Blade (piece) diameter length (mm) (mm) 2 PZ1 5.0 30 2 PZ2 6.0 30 2 PZ0 4.0 75 2 PZ1 5.0 75 2 PZ1 5.0 100 3 PZ2 6.0 125 3 PZ3 8.0 150 3 PZ4 9.9 200 * PZ = ISO code 2,380 and 4,757 [15] 3/8" square drive insert bit set (17 pieces) - It is a bit adapter set and can be used with socket accessories or torque wrenches. - House or container made of steel box and bits fitted with a form or plastic insert. - Bit set consists of: - Universal bit adapter. - Spinner handle. - 4 metrics hexagon bits, 3, 4, 5, 6 mm. - 5 A/F hexagon bits 3/32, 1/8, 5/32, 3/16, _ inches. - 3 long reach slotted screw insert bits 3, 4, 5.5 mm. - 3 pozidrive bits PZ1, PZ2, PZ3. - Container or box with cover.	

		INSULTATED PLIERS SET [16] They are for electricians used. [17] High quality steel in good forging. [18] Hot forged for strength and durability. [19] Smooth action. [20] Anti-slip moulding handle. [21] Insulated handle. [22] Pliers set are supplied the same brand consisting of: - 5 multi-grip plier jaw or channel lock pliers. - 240 mm. long max. jaw opening more 45 mm. - Slip joint with more than 6 positions. - 5 combination pliers. - Serrated jaw with cutting edge. - Max. wire cutting 1.6 mm. - 180 mm. long. - 5 snipe nose pliers or long nose pliers. - Taper straight nose with serrated jaw and side cutter. - Max. wire cutting 1.6 mm. - 200 mm. long. - 5 diagonal cutter pliers or side cutter pliers. - Fine sharpened for cutting copper wire. - Max. wire cutting 1.6 mm. - 160 mm. long. - 5 wire stripper pliers. - Spring release. - Adjustable screw with lock nut for repetition work. - Strip wire cap. 0.5 - 6 mm. - 160 mm. long. - 5 end cutter pliers. - Finely sharpened for cutting copper wire.	

		- Max. wire 1.6 mm. - 160 mm. long (approx.). - Cantilever tool box. - 3 tier construction. - Double handle closing 5 compartments. HAMMER TOOL SET Steel Hammer [23] Drop forging hammer processing. [24] Wooden or fiberglass handles. [25] Hammer head fixing (wooden handle). [26] 1-ball pein hammer size 4 Oz. 270 mm. long 65 head width 18 head thick. [27] 1-ball pein hammer size 16 Oz. 350 mm. long 100 head width 29 head thick. [28] 1-joiners warrington hammer No.0 size 8 Oz. 270 mm. long 105 head width 25 head thick. [29] Steel claw hammer (for nailing) size 16 Oz. 320 mm. long 130 head width 32 head thick. [30] Club hammer size 4 lbs. 240 mm. long 100 head width 42 head thick. Soft Face Hammer [31] 1-Copper/Copper hammer size 32 Oz. hammer No.1 face dia. 32, 280 mm. long. [32] 1-Nylon soft face hammer size 24 Oz. face dia. 38, length 300 mm. [33] 1-Rubber mallet size 24 Oz. head size 74x127 mm, length 380 mm. Cold chisels [34] 2-cold chisels blade width 10 mm. length 150 mm. Item Code Item Description / Specifications	

		[35] 2-cold chisels blade width 16 mm. length 200 mm. [36] 1-pinch bars blade width 25 mm. length 450 mm. Punches [37] 2-center punches trip O 6 mm. length 150 mm. [38] 2-taper punches trip O 6 mm. length 150 mm. [39] 2-automatic center punch - Pushing the end cap cause a spring to release for impact action. - Impact is adjusted by rotation of the knurl. - Trip O 6 mm. length 140 mm. [40] Hacksaw 2 sets. - Light weight construction resistant to oxidising. - Unique design giving increased blade tension. - Front hand rest. - Hand guard protection. - Die cast Aluminum handle and square section frame. - Cantilever blade adjustment. - Blade length 300 mm. standard size. - 24 blades for 18 TPI (Teeth per Inch) HSS. - 24 blades for 24 TPI HSS. [41] Files with handles. - 2-half round files 200 mm. long. - 2-round files 200 mm. long. - 2-flat files (corse) 200 mm. long. - 2-flat files (fine) 200 mm. long. - 2-square files 200 mm. long. [42] Pullers They are suitable for moving gears bearings sprockets and pulleys which be strong gripping and made of drop forged from high quality steel and heat treated.	

		- Twin and tripple leg pullers. - Internal and external used. - 1-twin leg puller spread 150 mm. reach 80 mm. - 1-twin + triple leg spread 200 mm. reach 140 mm. - 1-bearing puller kit. - Bearing separators fit behind bearing where puller jaw cannot enter. - All kits supplied in a metal case. - kit content: - Bearing separator 35 - 140 mm. capacity used with 2-leg puller. - Beam, screw, thrust nut and thrust race. - Main rods, nuts and washers (2). - 125 mm. extension rods (2) - Extension rods (4) - Separated. [43] Lock grip plier. It is serrated curved jaws with power full locking mechanism and quick release lever and froged jaws are harded, high quality housing. - 2-curves jaw lock grip pliers 190 mm. length 42 mm. jaw capacity. - 2-curves jaw lock grip pliers 235 mm. length 63 mm. jaw capacity. - 2-straight jaw lock grip pliers 190 mm. long 42 mm. jaw capacity 235 mm. long 63 mm. jaw capacity. [44] 6 wires crimpers. - Color coded crimping. - Screw shear cuts terminal screw. - Crimp ignition wire cutter. - General purpose wire cutter. - Wire stripping range 0.70 to 6 mm. O wire. - Rubber insulated handle.	

		[45] A 5-drawer roller cabinet. - Heavy duty plate side handles. - Ball bearing slides. - 5-drawers with sliding rail with key. - Drawer dimension width depth height (mm.) (mm.) (mm.) - 2 drawers (with 580 410 52 9 compartments) - 2 drawers 580 410 100 - 1 drawer 580 410 160 - 2 swivels and 2 fixed castors dia. 125 mm. - Top can be mounted to form 25 mm. deep tray reversed to provide a smooth for work table.	
AEE 67	Hand tools	2 no. Anvil with Stand [1] Function: for use in workshop [2] All steel construction, heavy cast iron stand [3] 600mm length [4] 300mm overall width of base [5] Weight 50kg approx 6 no. - Figure Stamp Set . [1] Function: for use in workshop [2] Figures 0 to 9 height 5mm [3] In plastic or sheet metal box Bench Vice [1] Drop forged steel [2] Width of Jaw 120mm	

		[3] Opening 140mm, quick release [4] One pair detachable Copper or lead grips [5] One pair detachable fibre grip 12no. Pipe Wrench [1] Function: for use in workshop [2] Drop forged steel [3] Crescent type, heavy duty [4] Steel handle with spring & adjusting nut [5] For nuts up to 2 inches 12no. Open Ended Wrench Set [1] Function: for use in workshop [2] Metric graduation [3] Regular head 15 deg angle jaw [4] Set of 8, sizes 8 to 27mm [5] Made in chrome vandium steel 12no. Vice Grip Pliers [1] Function: for use in workshop [2] Forged alloy steel jaw [3] Pressed steel body [4] Rust resistant finish [5] Lock & quick release lever [6] Approx 175mm Length [7] Capacity 32mm 12no. Screwdrivers [1] Function: for use in workshop [2] Set of 4 chrome vanadium steel [3] Hammer proof plastic handles	

		[4] Approx mm sizes - 3x70 length 140mm - 4x90 length 160mm - 6x130 length 220mm - 8x170 length 320mm 20no. Hacksaw [1] Function: for use in workshop [2] Adjustable tubular metal frame [3] Shaped handle, blade 250-300mm [4] With qty 50, 18 TPI spare blades	
AEE 68	sheet metal tools	12no. Tool boxes [1] Function: for use in workshop [2] Steel type, with two trays [3] Handles & locking catch for pad lock. [4] Approx size: 175x200x500mm Consisting of : 6no. Blow Lamps [1] Function: for use in workshop [2] Fuel: petrol or paraffin [3] Capacity 0.75 to 1 litre [4] Fitted with evercool handle [5] Saftey devices [6] Automatic cleaning needle 6no.Soldering Iron [1] Function: for use in workshop	

		[2] Copper, non electric [3] Straight with diamond tip [4] Wooden handle, weight 450gr. 12no. Punch & Chisel Set [1] Function: for use in workshop [2] 12 piece set [3] In wooden or metal holder [4] Approx Specification: - 1/4 inch cape chisel - 5/16" cape chisel round nose - 3/8" diamond point chisel - 1/4" cold chisel - center punch - solid punch - drift punch - 5/8" cold chisel - 1/8" pin punch - 5/32" pin punch 12no. Tap & Die Set, Metric Small [1] Function: for use in workshop [2] HSS set of 7, circular split pattern [3] To contain taper, 2nd, & bottoming taps, dies, die stocks & tap wrenches [4] Supplied with fitted case [5] Metric sizes: 6, 7, 8, 9, 10, 11 & 12mm 12no. Tap & Die Set, Metric Large	

		[1] Function: for use in workshop [2] HSS, Set of 6, circular split pattern [3] To contain taper, 2nd, & bottoming taps, dies, diestocks & tap wrenches [4] Supplied in fitted case [5] Metric sizes: 14, 16, 18, 20, 22 & 24mm 12no. Tap & Die Set, BSW [1] Function: for use in workshop [2] HSS, set of 7, circular split pattern [3]To contain taper, 2nd & bottoming taps, dies, diestocks & tap wrenches [4] Supplied in fitted case [5] BSW sizes: 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4 inch BSW 12 no. Wing Divider [1] Function: for use in workshop [2] With wing & locking screw [3] Fine polished [4] Box jointed [5] Suitable for all metal work [6] 200mm long 12no.Protractor [1] Function: for use in workshop [2]85mm diameter made of steel [3] Graduated to 180 deg in both directions 3no. Universal Surface Gauge [1] Function: for use in workshop [2] Hardened steel base	

		[3] Surface ground with V-groove [4] Spindle length 250mm [5] With scriber, scriber clamp & spindle clamp. 6no. Plumb & Spirit Level [1] Function: for use in workshop [2] Made of aluminium [3] With "rainbow" tubes 600mm. Riveter [1] Function: general metalwork shop use. [2] For all standard "pop" rivits 3 to 5mm 12no. Rivet Set-up Set [1] Function: for use in workshop [2] Made of hardened steel [3] For drawing up rivits before closing [4] In wooden stand [5] Set of 5 pieces for 4, 6, 8, 10 & 12 mm rivits	
AEE 69	FILES	Round Files [1] Set of 9 files [2] Tapers slightly to a point [3] For circular openings and concave Bastard, second and smooth [1] Length: 100mm, 200mm and 300mm [2] Complete with handles Square Files [1] Set of 8 files [2] For slots and keyways [3] Tapers slightly to a point [4] Double cut on all four sides [5] Bastard, second and smooth	

		[6] 150,250 and 300 (no smooth) [7] Complete with handles Three Square Files [1] Set of 8 files [2] Tapers slightly to a point [3] For filing out sharp corners and internal angles [4] Bastard, second and smooth [5] Length: 150mm, 200mm and 300mm (no smooth) [6] Complete with handles Tools - Engineers Flat Files [1] Function: for use in workshop [2] Set of 8 with handles [3] Approx sizes & cuts: - Flat 300mm bastard - Flat 250mm second cut - Flat 200mm smooth cut - Halfround 250mm bastard - Round 250mm bastard - Round 250mm second cut - Triangular 250mm second cut - Square 250mm second cut	
AEE 70	REAMERS	[1] made of special non-porous carbon cylindrical design [2] 150 mm long, drop-forged [3] with the following diameters a. 10 mm, 12 pcs. b. 15 mm, 12 pcs. c. 20 mm, 12 pcs. d. 25 mm, 12 pcs. e. 30 mm, 6 pcs.	

		Reamers Expansion [1] Expands for resizing purposes set of 9 [2] Expansion to offset wear by expansion screw carbide tipped. [3] Reamer dia: 3/8" to 1 1/4" [4] Shank dia: 5/16" to 1" [5] Overall length: 7" to 11" [6] Standard sizes. Reamers Morse Taper Sockets [1] Carbon steel with straight shanks and square drives, round shanks using electric drills set of 6 [2] Small end dia: 0.25" to 1.471" [3] Large end dia: 0.367" to 1.799" [4] Overall length: 3.75" to 9.75" [5] Taper nos: 0 to 5 [6] Standard sizes. Adjustable Reamers [1] Function: general machine shop work [2] Set of 9, cylindrical shaft square blades [3] Made of special steel [4] Right hand cutting [5] Complete in wooden box [6] Approx measuring range:10-31mm	
AEE 71	Heavy Duty Photocopiers	General type Monochrome multifunctional for A3 formats Technology: Laser, Mono component Engine speed Up to 82/41 pages per minute A4/A3 Resolution:1,200 dpi quality (1,800 dpi level x 600 dpi) (copy/print), 600 x 600 dpi, 256 greyscale (scan) Warm-up time30 seconds or less from power on	

		Time to first copy Approx. 2.9 seconds Dimensions (W x D x H) Main unit: 680 x 811 x 1,190 mm Weight Main unit incl. toner: Approx. 188 kg Power consumption Printing: 2000 W or less, Stand-by: 630 W, Sleep-mode: 10 W Power source AC 220 ~ 240 V, 50/60 Hz Noise (ISO7779) Printing: 75 dB(A), Stand-by: 58 dB(A) Safety standards TÜV/GS, CE - This product is manufactured according to ISO 9001 quality standard and ISO 14001 environmental standard. PAPER HANDLING Input capacity 2 x 1,500 sheet high-capacity paper feeder, 60–160 g/m², A4, 2 x 500-sheet universal paper feeder, 60–160 g/m², A3–A5R, Folio; 100-sheet multi-purpose tray, 45–200 g/m², A3–A6R, Folio Max. input capacity with options8,100 sheets A4 Duplex unit Double-side printing as standard; A3–A5, 64–160 g/m² Processor: Power PC750FX -600MHz Memory Standard 64 MB, max. 512 MB (2 additional DIMM slots for 32, 64, 128, 256 MB), 1 CompactFlash® card slot Controller language PRESCRIBE IIe Emulations PCL 6, KPDL3 (Postscript 3 compatible), Automatic Emulation Switching, KC GL (HP-7550A), Line Printer, IBM Proprinter X24, EPSON LQ 850, DIABLO 630 Fonts80 outline fonts (PCL6), 136 PostScript KPDL 3 fonts, 1 bitmap font, 45 types of one-dimensional barcodes plus two-dimensional barcode (PDF-417) Features EMPS, Proof and hold, Private print, Job storage, Job management functionality COPY Max. original size A3 Digital copy features Energy save mode, Interrupt copy, Scan once print many, EcoPrint mode, Electronic sort, Rotate sort, Rotate copy, n-up copy, Split	

		copy, Cover mode, Page numbering, Image overlay, Margin shift, Border erase, Positive negative, Mirror, Proof mode, Booklet copy, Program function, Job building, Job reservation, Image centring, Repeat copy, Form registration, Shared data box, Synergy print box Preset magnification ratios 22 Reductions/9 Enlargements Zoom range 25 - 400 % in 1% steps Continuous copy 1 - 9.999 Memory capacity Standard 128 MB and 40 GB HDD SCAN Bundled software DB-Assistant, Scanner file utility, Address Book, Address Editor, TWAIN source File type TIFF, PDF (high compressive/encrypted) Original recognition Text, Photo, Text + Photo, OCR Max. scan size A3 Scan functionalities Scan-to-PC, Scan-to-email, Scan-to-email, Network TWAIN, Scan-to-SMB Scan resolution 600, 400, 300, 200 dpi Scan speed 110 originals per minute (300 dpi/A4 Duplex) Interfaces Standard interface Slot for optional Compact Flash®-Card, USB 2.0 (Hi-Speed), High speed bi-directional parallel (IEEE 1284), Fast Ethernet (10/100BaseTX), KUIO-LV interface slot	
AEE 72	Hydraulics Bench and its accessories	[1] Self-contained mobile service module. [2] Constructed from lightweight, corrosion resistant glass reinforced plastic. [3] Open channel incorporated in bench top. [4] Volumetric flow measurement for both high and low flow rates. [5] Capacities: high flow 40 litres, low flow 6 litres.	

		[6] Easy to use quick-release connections allowing rapid exchange of accessories. [7] Pump tank capacity 160 litres. [8] Supplied with computer aided learning programs (Windows based) for use with the Hydraulics Bench accessories. [9] For demonstration of the Eighteen optional Armfield accessories [10] When coupled to the bench, the accessories are immediately ready for use and require no additional service items. Accessories to be used in conjunction with Hydraulic Bench [1] Eighteen accessories: Dead weight pressure gauge calibrator Hydrostatic pressure Flow over weirs utilising bench top channel Metacentric height Bernoulli's theorem demonstration Impact of a jet Orifice and free jet flow Orifice discharge Energy losses in pipes Flow channel with models Osborne Reynolds' demonstration Flow meter demonstration Energy losses in bends and fittings Free and forced vortex Hydraulic ram Demonstration pelton turbine	

		Series/parallel pumps Centrifugal pump characteristics [2] When coupled to the bench, the accessories are immediately ready for use and require no additional service items.	
AEE 73	Gasoline & Alternative Fuels Engine Test Bed	Test bed specifically designed for educational analysis of performance of automobile engines. Provided with all necessary instruments for measurement of at least the following parameters: - Fuel consumption - Air flow - Temperature - RPM Used for demonstration of performance of Petrol Engines at different throttle settings and different load Should be provided with Data Acquisition system for monitoring. Should feature an eddy current dynamometer and measuring instruments for measuring key parameters required for performance analysis of an engine. The eddy current dynamometer should provide a variable load on the engine, allowing the characteristic power and torque curves to be reproduced in the laboratory. It should have a rating of at least 80 kW It should allow fast coupling of the engine to the dynamometer The test bed should be equipped with a dynamometer control panel with necessary safety instruments. • Eddy current Dynamometer: Capacity: 50 kW, Water Cooled • Engine: a. 1400 cc, Petrol Engine mounted on frame • Air Box with Orifice plate for Air flow measurement. • Fuel Tank. • Propeller shaft with protective covering.	

		• Measuring Instruments :RPM Sensor, Differential Pressure Transmitter for Air, Fuel Level Sensor , Thermocouples , Torque Sensor Supplied with: 1 x set of Anti Vibration Pads 1 x Auxiliary cooling unit for engine 1 x Exhaust Gas Calorimeter 1 x Cooling Water Flow Transmitter 1x Pipe In pipe type heat exchanger Thermocouples for water & gas temperature. Data Acquisition System & Software: 16 Channel High speed DAQ Card with USB Port Data Acquisition Card, 16 Channel High speed DAQ Card with USB Port and Labview based Software for data acquisition, real time display, graphical representation, calculation & tabular results. With P-V Diagram Module TO allow at least the following tests: Engine cylinder pressure Crank angle Encoder Experiments Measurement & Calculation of Volumetric efficiency. Measurement & Calculation of specific fuel consumption Measurement & Calculation of brake thermal efficiency Determining air / fuel ratios Heat Balance Test	
AEE 74	Diesel Fuel Engine test bed	Test bed specifically designed for educational analysis of performance of automobile engines. Provided with all necessary instruments for measurement of at least the following parameters: - Fuel consumption - Air flow	

		- Temperature - RPM Used for demonstration of performance of Petrol Engines at different throttle settings and different load Should be provided with Data Acquisition system for monitoring. Should feature an eddy current dynamometer and measuring instruments for measuring key parameters required for performance analysis of an engine. The eddy current dynamometer should provide a variable load on the engine, allowing the characteristic power and torque curves to be reproduced in the laboratory. It should have a rating of at least 80 kW It should allow fast coupling of the engine to the dynamometer The test bed should be equipped with a dynamometer control panel with necessary safety instruments. • Eddy current Dynamometer: Capacity: 50 kW, Water Cooled • Engine: a. 1400 cc, Diesel Engine mounted on frame • Air Box with Orifice plate for Air flow measurement. • Fuel Tank. • Propeller shaft with protective covering. • Measuring Instruments: RPM Sensor, Differential Pressure Transmitter for Air, Fuel Level Sensor , Thermocouples , Torque Sensor Supplied with: 1 x set of Anti Vibration Pads 1 x Auxiliary cooling unit for engine 1 x Exhaust Gas Calorimeter 1 x Cooling Water Flow Transmitter 1x Pipe In pipe type heat exchanger Thermocouples for water & gas temperature.	

		Data Acquisition System & Software: 16 Channel High speed DAQ Card with USB Port Data Acquisition Card, 16 Channel High speed DAQ Card with USB Port and Labview based Software for data acquisition, real time display, graphical representation, calculation & tabular results. With P-V Diagram Module TO allow at least the following tests: Engine cylinder pressure Crank angle Encoder Experiments Measurement & Calculation of Volumetric efficiency. Measurement & Calculation of specific fuel consumption Measurement & Calculation of brake thermal efficiency Determining air / fuel ratios Heat Balance Test	
AEE 75	Hydraulic Braking Systems trainer	The module must include a bench-top hydraulics trainer that allows the student to undertake a series of hands-on tasks that relate to hydraulic systems. It must be complete with all the hydraulic devices, connectors, mechanical and electrical components The trainer provides knowledge and skills for the correct and responsible maintenance and repair of hydraulic brake system. It includes of following: • A dual-circuit brake system • Disc brake • Drum Brake • Brake load distributor • Tandem brake system The trainer features hydraulic measuring points for pressure measurement. A built-in hydraulic pressure switch is given to activate brake light.	

		The disc brake and drum brake enable rotation and disassembly manually. Supplied with accessories for: • Brake charging • Brake bleeding • Brake cylinder repair • Brake system leak • Function test • Test and adjustment on brake pressure • Brake power regulator Other related accessories for the functionality of this equipment shall be provided. User/Operational manual shall be provided for this equipment.	
AEE 76	Automatic Gear box	Six speed petrol & diesel gear boxes to be attached to 2000 cc and 3000 cc engines respectively	
AEE 77	Multi point injection trainer	Training model	
AEE 78	Motor electrical wiring training board	Trainer model with computerized simulation	
AEE 79	Cantilever waste oil drawing unit	20 liters cantilever	
AEE 80	Tyre bred separator	15 inches	
AEE 81	Tyre changer	15 inches	
AEE 82	Motor vehicle Electronic/electricity trainer	Training model with sets of wire and current and voltages meters	
AEE 83	Ultrasonic flow detector	Computerized, - USB Programmable; Battery powered, BNC plugs into 4/20mA output, software included. - Flow Range:. +/- 0.3 to 30 FPS. (Full Pipe) - Output:4-20mA, RS232 - Data Entry: Keypad & IRD/USB Software included.	

		- Temp.: -400 to 1850 F - Transducer Type: Dual transducers, Clamp-On with 20 ft of cable - Pipe Size pipe sizes 15-100mm or 100 - 700mm, complete with manual and stainless steel straps - Mounting Kit Mounting track, - Pipe material Materials: All metals, most plastics, fiber glass, etc. - Pipe Length: Better longer than 15D, where D is pipe diameter. If a pump is near, the straight pipe section following the pumps should be > 30D - strap(s), Acoustic mounting - Sealant and carrying case. - Temperature… Std -400 to 2250 F	
AEE 84	Dye penetrant MD	- MX3448 Waterwash Penetrant system, 34"x48" tanks & rest stations, 34"x72" drier & inspection booth, complete with uv lamps - Dryer oven: Front Loading with Counter Balanced Door, Certifiable Digital Thermostat, Removable Shelf, 36" dimension front to back, 460 v, 3 ph - Inspection boot: 36" x 36" x 84" high, with Countertop, Solid Roof, Curtain-enclosed, 115v outlet for Blacklight (not included) Whitelight, and Fan - Developer Station: Air-Activated Dry Powder with Dust Collector/Vacuum System, Fold-Back Lid with V-Bottom, 36" dimension front to back	
AEE 85	Eddy current MD tester	- Test frequency: 2.5, 5, 10, 25, 50, 100, 200 kHz; - Sensitivity: 0-99dB calibrated in 1 dB steps; - Operating system: Windows; - Power: 240 V, 50 Hz, 5 A	
AEE 86	Automotive Oscilloscopes Diagnostic software Kits	Compression tester, Automatic measure, Electrical System test. Cylinder balance Analyzer, Oscilloscope:	

		- picoscope 3223,600 A, - AC/DC current lamp, - 60 A DC current clamp, - 2-pin break out lead Soft Ware: Dynomotion – 5.10, compatible with XP, Vista, Win7 Two (2) computers: 2.66 GHZ 1500 GB S-ATA 300, 8 GB RAM DDR3, 650GB Hard Disk, ATI OR NVIDIA	
AEE 87	Diagnostic Testers	Crypton cipher Omitec Multi-meter Omiscan Hand held	
AEE 88	Emission Analyzers	Petrol Diesel Combined	
AEE 89	Diagnostic Scanners	Universal - Limited Time- 2 years FREE internet updates! (valid for purchases before 12-31-2009) - OE level coverage for European, Asian, American and Chinese cars - Access to powertrain, chassis, and body systems - Quick Test function test most vehicle systems - Fault codes (DTC's), DataStream and Service Reset - Actuations, Adaptations, and Control Module Coding - Supports Multi-language for an international marketplace - CAN-BUS with high/low speed - One OBD II connector for all CAN bus systems - High resolution VGA color TFT display - Windows CE Operating System - Demo Mode for many OEM's	

		- Self-check function - Data graphing	
AEE 90	Lubrication Equipment and pipe work	Standard 60:1 pump, cover, hose, grease control valve and dolly with pail of grease	
AEE 91	Diesel Fuel Delivery system	standard	
AEE 92	Probes	Intelligent Auto-electrical tester Alternator diode test probe Injector test probe Audio probe Ultrasonic leak detector probe	
AEE 93	Brake Lathes	Standard	
AEE 94	Wheel Balancer kits	Automatic, for wheel of sizes 13 to 26	
AEE 95	Wheel Aligners Kits- laser type	Laser standard equipment 2x measuring heads including wheel hangers lx24 "wheel hangers 2 x rear scales 1x steering wheel lock 1x pair turn plate bases 1 x Auto data book 1 x instruction book On illuminated mobile merchandising trolley c/w charging systems	
AEE 96	Wheel Aligners Kits-computerized	1 x mobile computer workstation 1 x industrial specification linux computer 1 x 17 "colour TFT monitor 1 x computer keyboard 1 x colour inkjet printer 4 x Bluetooth BT2 cordless digital infrared sensors 1 x lithium re-charging system 1 x foot brake pedal depressor 1 x steering wheel lock	

		4 x wheel hangers 12"to 24"	
AEE 97	Torque converter model	Speed: 2300 - 2500 RPM, Requires 10 75 Inches Bolt Circle Or Dual Pattern Flexplate 3-Speed, Automatic Transmission, transmission (based on an engine producing 230 lb. ft. of torque at 2500 RPM) Size: H×L×W= 7"×15"×14"	
AEE 98	Fluid flywheel model	Standard, for car or commercial vehicle	
AEE 100	In-line injection pump model (diesel)	- With (6) standard 14mm flat top plungers; - 107mm bearing plate 21mm rack travel - Clockwise rotation - 14mm camshaft lift - With RSV governor assembly 21mm (0.8 inch) longer and 31mm (1.2 inch) - 35mm taped drive end with slop ratio 1:5 and M24 x 15 thread - 16mm plunger & barrel kit for extreme plus performance application - 1000 to 3000 cc fuel delivery	
AEE 101	Piston ring squeezer	-Minimum diameter 45mm -Max diameter 90mm	
AEE 102	Diesel pump test bench machine.	- Indian machine tools, -12 test injectors, -one phasing bar	
AEE 103	Starter motor armature growler tester.	-operation Voltage-240 V -current 4 amps - suits armatures of 50 mm-130mm diameter	
AEE 104	Spray paint kit	Heavy duty with Spray Gun — HVLP Primer, 1.8mm,	
AEE 105	Spray gun	-gravity feed manual spray gun -body; aluminum -Weight 27ozw/cup -Air inlet ¼" NPS (M)	

		-fluid inlet 3/8 " bsp(f) - fluid passage aluminum - gravity feed -gun repair kit: FLG 488	
AEE 106	Fuel pump tester (petrol) injection	-capacity120 lts/hour, -Resistance 0.8 ohms, -voltage 12volts, -Amperes 10.5 A	
AEE 107	Injector tester petrol	-voltage12 Y, - resistance16 OHMS, - capacity 150 cc per minute.	
AEE 108	Battery Charger	4-12 Amps 12-36 Volts Fully Automatic Multimode Electronic Chargers 90-260 VAC 50/60Hz 3 Stage	
AEE 109	Spark plug tester	Digital, voltage inten. @ plug	
AEE 110	Hydraulic Body Jack	Maximum load 20 ton	
AEE 111	Mechanical Body Jack	Capacity: 2 to 15 tones set	
AEE 112	Valve compressor spring	Universal (standard)	
AEE 113	Radiator flushing gun	Pressure not more than 20 PSI	

4. Drawings

This bidding document includes **NO** drawings.

[If documents shall be included, insert the following List of Drawings]

List of Drawings		
Drawing Nr.	**Drawing Name**	**Purpose**

5. Inspections and Tests

The following inspections and tests shall be performed:

i. **certificate of origin**
ii. **Inspection certificate by the Government Agent**
iii. **Goods received in good order**
iv. **Pre-Shipment Inspection by the Purchaser.**
v. **Final Inspection by the Purchaser.**

Part 3 – Contract

Section VIII - General Conditions of Contract

Table of Clauses

Section VIII - General Conditions of Contract

1. **Definitions**

1.1 The following words and expressions shall have the meanings hereby assigned to them:

(a) "Bank" means the financing institution named in the Special Conditions of Contract (SCC).

(b) "Borrower" means the entity named as the Borrower in the SCC.

(c) "Contract" means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.

(d) "Contract Documents" means the documents listed in the Contract Agreement, including any amendments thereto.

(e) "Contract Price" means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.

(f) "Letter of Bid" means the document entitled letter of bid, which was completed by the Supplier and includes the signed offer to the Purchaser for the Goods.

(g) "Specification" means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Goods.

(h) "Drawings" means the drawings of the Goods, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Purchaser in accordance with the Contract.

(i) "Schedules" means the document(s) entitled schedules, completed by the Supplier and submitted with the Letter of Bid, as included in the Contract. Such document may include the Bill of

Quantities, data, lists, and schedules of rates and/or prices.

(j) "Bid" means the Letter of Bid and all other documents which the Supplier submitted with the Letter of Bid, as included in the Contract.

(k) "Day" means calendar day.

(l) "Completion" means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.

(m) "GCC" means the General Conditions of Contract.

(n) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.

(o) "Purchaser's Country" is the country specified in the **Special Conditions of Contract (SCC).**

(p) "Purchaser" means the entity purchasing the Goods and Related Services, as **specified in the SCC.**

(q) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.

(r) "SCC" means the Special Conditions of Contract.

(s) "Subcontractor" means any person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

(t) "Supplier" means the person, private or government entity, or a combination of the above, whose Bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.

(u) "The Project Site," where applicable, means the place named in the **SCC.**

(v) "Party" means the Purchaser or the Supplier as the context requires.

(w) "Change Order" or "Change" is defined in Clause 33 [Change Orders and Contract Amendments.]

(x) Bank Procurement Framework is defined as Procurement Framework for Goods, Works, Non-Consulting and Consulting Services under "Bank Financing" as defined under Procurement Policy for Bank Group funded operations.

2. **Contract Documents**

2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

3. **Fraud and Corruption**

3.1 The Bank requires compliance with the Integrity Framework comprising the African Development Bank Group's Sanctions Procedures, the Bank's Whistleblowing and Complaints Policy, the Bank's Procurement Policy under the Procurement Framework and any other applicable Policies and Procedures including their updates, as set forth in Appendix 1 to the GCC.

3.2 The Purchaser requires the Supplier to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the Bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

4. **Interpretation**

4.1 In the Contract, except where the context requires otherwise:

(a) words indicating one gender include all genders;

(b) words indicating the singular also include the plural and vice-versa;

(c) provisions including the word "agree", "agreed" or "agreement" requires the agreement to be recorded in writing;

(d) "written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record;

(e) the word "tender" is synonymous with bid and "tenderer" with "bidder" and the words "tender documents" with "bidding documents";

(f) The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

4.2 Incoterms

(a) Unless inconsistent with any provision of the Contract**,** the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms **specified in the SCC**.

(b) The terms EXW, CIP, FCA, CFR and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms specified in the **SCC** and published by the International Chamber of Commerce in Paris, France.

4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Contract.

4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

(a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence

by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. **Language**

5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the **SCC.** Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified, in which case, for purposes of interpretation of the Contract, this translation shall govern.

5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Supplier.

6. **Joint Venture, Consortium or Association, Subcontractors**

6.1 Unless otherwise specified in SCC, if the Supplier is a joint venture, consortium, or association (JV), all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser. Any limit on the maximum number of members in the Joint Venture, Consortium or Association shall be as specified in SCC. Minimum Share of a Member of the JV shall be as specified in SCC.

7. **Eligibility**

7.1 The Supplier and its Subcontractors shall have the nationality of an eligible country of the Bank in accordance with the Bank's Procurement Policy for the Bank Group Funded Operation described under the Bank's Procurement Framework, and as listed in Section V, Eligible Countries under Appendix 2 to General Conditions. A Supplier or Subcontractor shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country.

7.2 All Goods and Related Services to be supplied under the Contract and financed by the Bank shall have their origin in Eligible Countries of the Bank in accordance with the Bank's Procurement Policy for the Bank Group Funded Operation described under the Bank's Procurement Framework, and as listed in Section V, Eligible Countries. For the purpose of this Clause, origin means the country where the goods have been grown, mined, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

8. **Notices**

8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the **SCC.** The term "in writing" means communicated in written form with proof of receipt.

8.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

9. **Governing Law**

9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser's Country, unless otherwise specified in the **SCC.**

9.2 Throughout the execution of the Contract, the Supplier shall comply with the import of goods and services prohibitions in the Purchaser's Country when

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

9.2 (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

10. **Settlement of Disputes**

10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure specified in the **SCC.**

10.3 Notwithstanding any reference to arbitration herein,

(a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

(b) the Purchaser shall pay the Supplier any monies due the Supplier.

11. **Inspections and Audit by the Bank**

11.1 The Supplier shall keep, and shall make all reasonable efforts to cause its Subcontractors to keep, accurate and systematic accounts and records in respect of the Goods in such form and details as will clearly identify relevant time changes and costs.

11.2 Pursuant to paragraph 2.2 e. of Appendix 1 to the General Conditions the Supplier shall permit and shall cause its subcontractors and subconsultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Supplier's and its Subcontractors' and subconsultants' attention is drawn to Sub-Clause 3.1 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures).

12. **Scope of Supply**

12.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.

13. **Delivery and Documents**

13.1 Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule of Requirements. The details of shipping and other documents to be furnished by the Supplier are specified in the **SCC.**

14. **Supplier's**

14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in

Responsibilities accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.

15. **Contract Price**

15.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its Bid, with the exception of any price adjustments authorized in the **SCC.**

16. **Terms of Payment**

16.1 The Contract Price, including any Advance Payments, if applicable, shall be paid as specified in the **SCC.**

16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.

16.3 Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.

16.4 The currencies in which payments shall be made to the Supplier under this Contract shall be those in which the Bid price is expressed.

16.5 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period set forth in the **SCC,** the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate shown in the **SCC,** for the period of delay until payment has been made in full, whether before or after judgment or arbitrage award.

17. **Taxes and Duties**

17.1 For goods manufactured outside the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's Country.

17.2 For goods Manufactured within the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser's Country, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

18. **Performance Security**

18.1 If required as specified in the SCC, the Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount specified in the **SCC.**

18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

18.3 As specified in the SCC, the Performance Security, if required, shall be denominated in the currency(ies) of the Contract, or in a freely convertible currency acceptable to the Purchaser; and shall be in one of the format stipulated by the Purchaser in the SCC, or in another format acceptable to the Purchaser.

18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless specified otherwise in the **SCC.**

19. **Copyright**

19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party

20. **Confidential Information**

20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.

20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.

20.3 The obligation of a party under GCC Sub-Clauses 20.1 and 20.2 above, however, shall not apply to information that:

(a) the Purchaser or Supplier need to share with the Bank or other institutions participating in the financing of the Contract;

(b) now or hereafter enters the public domain through no fault of that party;

(c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or

(d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date

of the Contract in respect of the Supply or any part thereof.

20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.

21. **Subcontracting**

21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Such notification, in the original Bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.

22. **Specifications and Standards**

22.1 Technical Specifications and Drawings

(a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VI, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods' country of origin.

(b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.

(c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.

23. **Packing and Documents**

23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

24. **Insurance**

24.1 Unless otherwise specified in the **SCC,** the Goods supplied under the Contract shall be fully insured—in a freely convertible currency from an eligible country—against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the **SCC.**

25. **Transportation and Related Services**

25.1 Unless otherwise specified in the **SCC,** responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.

25.2 The Supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

(a) performance or supervision of on-site assembly and/or start-up of the supplied Goods;

(b) furnishing of tools required for assembly and/or maintenance of the supplied Goods;

(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;

(d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and

(e) training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

25.3 Prices charged by the Supplier for related services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services

26. **Inspections and Tests**

26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in the **SCC.**

26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the Goods' final destination, or in another place in the Purchaser's Country as specified in the **SCC.** Subject to GCC Sub-Clause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable

advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.

26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 26.4.

26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. **Liquidated** 27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the

Damages Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the **SCC** of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in those **SCC.** Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. **Warranty**

28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

28.2 Subject to GCC Sub-Clause 22.1(b), the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.

28.3 Unless otherwise specified in the **SCC,** the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the **SCC,** or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.

28.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

28.5 Upon receipt of such notice, the Supplier shall, within the period specified in the **SCC,** expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

28.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the **SCC,**

the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29. **Patent Indemnity**

29.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and

(b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 `The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30. **Limitation of Liability**

30.1 Except in cases of criminal negligence or willful misconduct,

(a) the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser and

(b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the supplier to indemnify the Purchaser with respect to patent infringement

31. **Change in Laws and Regulations**

31.1 Unless otherwise specified in the Contract, if after the date of 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's Country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. **Force Majeure**

32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

32.2 For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for

performance not prevented by the Force Majeure event.

33. **Change Orders and Contract Amendments**

33.1 The Purchaser may at any time order the Supplier through notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:

(a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;

(b) the method of shipment or packing;

(c) the place of delivery; and

(d) the Related Services to be provided by the Supplier.

33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight (28) days from the date of the Supplier's receipt of the Purchaser's change order.

33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

33.4 Subject to the above, no variation in, or modification of, the terms of the Contract shall be made except by written agreement signed by the parties.

34. **Extensions of Time**

34.1 If at any time during performance of the Contract, the Supplier or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 13, the Supplier shall promptly notify the

Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. **Termination**

35.1 Termination for Default

(a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:

(i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34;

(ii) if the Supplier fails to perform any other obligation under the Contract; or

(iii) if the Supplier, in the judgment of the Purchaser has engaged in Fraud and Corruption, as defined in paragrpah 2.2 a of the Appendix 1 to the GCC, in competing for or in executing the Contract.

(b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However,

the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency.

(a) The Purchaser may at any time terminate the Contract by giving notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser

335.3 Termination for Convenience.

(a) The Purchaser, by notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

(b) The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

(i) to have any portion completed and delivered at the Contract terms and prices; and/or

(ii) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

35.4 Anytime the contract is terminated for any reason indicated under clause 35, the advance payments made, if any, on the undelivered Goods and Related Services, if not already recovered from the Supplier shall become payable to the Purchaser

which the Supplier shall pay to the Purchaser within 15 days from the date of receipt of notice of such termination failing which the amount will be recovered as demand by calling the advance payment Bank Guarantee provided under the contract.

36. **Assignment**

36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

37. **Export Restriction**

37.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, which arise from trade regulations from a country supplying those products/goods, systems or services, and which substantially impede the Supplier from meeting its obligations under the Contract, shall release the Supplier from the obligation to provide deliveries or services, always provided, however, that the Supplier can demonstrate to the satisfaction of the Purchaser and of the Bank that it has completed all formalities in a timely manner, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract. Termination of the Contract on this basis shall be for the Purchaser's convenience pursuant to Sub-Clause 35.3.

APPENDIX 1 TO GENERAL CONDITIONS

Fraud and Corruption

1. Purpose

1.1 The Bank's Integrity Framework and this annex apply with respect to procurement under Bank Investment Project Financing operations.

2. Requirements

2.1 The Bank requires that Borrowers (including beneficiaries of Bank financing); bidders (applicants), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of Bank-financed contracts, and refrain from Fraud and Corruption[11].

2.2 To this end, the Bank:

a. Defines, for the purposes of this provision, the terms set forth below as follows:

i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party[12];

ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party[13] to obtain financial or other benefit or to avoid an obligation;

iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v. "obstructive practice" is:

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[11] In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

[12] For the purpose of this sub-paragraph, "another party" refers to a public official acting in relation to the procurement process or contract execution, including Bank staff and employees of other organizations taking or reviewing procurement decisions.

[13] For the purpose of this sub-paragraph, "party" refers to a public official, including Bank staff and employees of other organizations taking or reviewing procurement decisions.; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution."

(a) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 2.2 e. below.

b. Rejects a proposal for award if the Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring misprocurement, if the Bank determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

d. Pursuant to the Bank's Integrity Framework and in accordance with the Bank's prevailing sanctions policies and procedures, may sanction a firm or individual, either indefinitely or for a stated period of time, including by publicly declaring such firm or individual ineligible (i) to be awarded or otherwise benefit from a Bank-financed contract, financially or in any other manner;[14] (ii) to be a nominated[15] sub-contractor, consultant,

[14] For the avoidance of doubt, a sanctioned party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and bidding, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to any existing contract.

[15] A nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider (different names are used depending on the particular bidding document) is one which has been: (i) included

manufacturer or supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract; and (iii) to receive the proceeds of any loan made by the Bank or otherwise to participate further in the preparation or implementation of any Bank-financed project;

e. Requires that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring (i) bidders (applicants), consultants, contractors, and suppliers, and their sub-contractors, sub-consultants, service providers, suppliers, agents personnel, permit the Bank to inspect[16] all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the Bank.

by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.

16 Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Bank or persons appointed by the Bank to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

APPENDIX 2 TO GENERAL CONDITIONS

Eligible Countries

Eligibility for the Provision of Goods, Works and Services in Bank Group Financed Procurement

A. Provisions under Section 5 "Eligibility" of the Procurement Policy for Bank Group Funded Operations and Chapter A2 of the Operations Procurement Manual under Procurement Framework of the African Development Bank

1. The African Development Fund (ADF) permits firms and individuals from all countries to offer goods, works and services for ADF funded projects.

   However, the proceeds of any Financing undertaken in the operations of the African Development Bank (ADB) and the Nigeria Trust Fund (NTF) shall be used for procurement of goods and works, including the related services, provided by bidders from Eligible[17] Countries.[18] Any conditions for participation shall be limited to those that are essential to ensure the firm's capability to fulfill the contract in question. In the case of ADB and NTF, bidders from non-Member Countries offering goods, works and related services (including transportation and insurance) are not eligible even if they offer these from Eligible Member Countries. Any waiver to this rule will be in accordance with the Articles 17(1) (d) of the Agreement Establishing the African Development Bank and 4.1 of the Agreement Establishing the Nigeria Trust Fund.

B. Rules and Procedures for Procurement of Goods and Works

Overview

1. The eligibility criteria for participation in the supply of goods, works and related services, to be procured through the ADB and NTF Financing, derive from the requirements of the Agreement Establishing the African Development Bank, Article 17.1.d, and the Agreement Establishing the Nigeria Trust Fund, Article 4.1. The foregoing requirements basically prescribe two types of eligibility criteria:

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[17] Refer to Bank Framework for additional information on Eligibility.

[18] "Eligible Countries" shall mean: (a) in the case of the African Development Bank (ADB) and the Nigeria Trust Fund (NTF), the Member Countries of the ADB; and (b) in the case of the African Development Fund, any country.

i) The eligibility of the bidder;

ii) The eligibility of the goods, works and related services.

Eligibility of the Bidder Under the ADB & NTF Financing

2. The eligibility of the bidder shall be based on nationality, in accordance with the following rules:

   (a) Natural Persons: A natural person is eligible if he or she is a national of a Member Country of the ADB. Where a person has more than one nationality, such a person shall be eligible if the nationality indicated in his or her bid is that of a Member Country of ADB.

   (b) Corporations: A corporation is eligible if it satisfies the following criteria:

      i) it is incorporated in a country that is a Member of the ADB;

      ii) it is a national of a country that is a Member of the ADB, as determined by the law of its place of incorporation; and

      iii) it has its principal place of business in a country that is a Member of the ADB.

   (c) Joint Ventures and Associations: An unincorporated joint venture, partnership, or association, shall be eligible if more than 50% of the value of its works and/or services is executed by its members satisfying the eligibility requirements for individuals or corporations.

Eligibility of the Goods, Works and Related Services

3. In order to be eligible, the goods to be procured must have been mined, grown, or produced, in the form in which they are purchased, in an Eligible Member Country.
4. For works contracts, which may include civil works, plant construction, or turnkey contracts, the contractor must satisfy the nationality criteria of eligibility, either as a natural person, or corporation, or joint venture and association. Labour, equipment, and materials needed for carrying out the works contract, shall be supplied from Eligible Member Countries.
5. For contracts, which have been awarded on the basis of Cost, Insurance and Freight (CIF), or Carriage and Insurance Paid (CIP), bidders shall be free to arrange for ocean and other transportation, and the related insurance, from any Eligible Member Country. On the other hand, where goods are shipped on FOB basis, and the Bank has agreed to finance transportation and insurance separately, which are arranged by the purchaser, under a separate contract, the Bank shall be satisfied that the services are supplied from Eligible Member Countries.

List of Eligible Countries

6. List of Eligible countries can be found in African Development Bank's website:

   https://www.afdb.org/en/about-us/corporate-information/members/

Ineligible Countries in reference to ITB 4.8 and ITB 5.1

7. In reference to ITB 4.8 and ITB 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this Bidding process:

   Under ITB 4.8(a) and ITB 5.1: *[insert a list of the countries following approval by the Bank to apply the restriction or state "none"]*.

   Under ITB 4.8(b) and ITB 5.1: *[insert a list of the countries following approval by the Bank to apply the restriction or state "none"]*

Section IX - Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1 (a)	The Financing Institution is **African Development Fund**
GCC 1.1 (b)	The Borrower is **Government of Kenya**
GCC 1.1(o)	The Purchaser's Country is: **Kenya**
GCC 1.1(p)	The Purchaser is: **Ministry of Education| State Department for Technical, Vocational Education and Training**
GCC 1.1 (u)	The Project Site(s)/Final Destination(s) is/are: **MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE – NYERI COUNTY** **AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE – NANDI COUNTY**
GCC 4.2 (a)	The meaning of the trade terms shall be as prescribed by Incoterms.
GCC 4.2 (b)	The version edition of Incoterms shall be **Incoterms 2010 published by the International Chamber of commerce**
GCC 5.1	The language shall be: **English**
GCC 8.1	For **notices**, the Purchaser's address shall be: **The Project Coordinator** **Teleposta Towers, Kenyatta Avenue** **24th floor, room 2412** **P.O Box 9583-00200** **NAIROBI, KENYA** **+254 020 2217210/1/2/4/6/8/9** **procurement.afdb@education.go.ke**

GCC 9.1	The governing law shall be the law of: **The Republic of Kenya**
GCC 10.2	The rules of procedure for arbitration proceedings pursuant to GCC Clause 10.2 shall be as follows: ***(a) Contract with foreign Supplier:*** GCC 10.2 (a)—Any dispute, controversy or claim arising out of or relating to this Contract, or breach, termination or invalidity thereof, shall be settled by arbitration in accordance with the UNCITRAL Arbitration Rules as at present in force. . ***(b) Contracts with Supplier national of the Purchaser's Country:*** In the case of a dispute between the Purchaser and a Supplier who is a national of the Purchaser's Country, the dispute shall be referred to adjudication or arbitration in accordance with the laws of the Purchaser's Country.
GCC 13.1	Details of Shipping and other Documents to be furnished by the Supplier are • **Supplier invoice showing goods description, quality, unit price and total amount- Original/Certified copy.** • **Bill of Lading/AirWay Bill –Original/Copy** • **Packing list identifying content of each lot.** • **Insurance Certificate.** • **Manufacturers' or Suppliers Warranty Certificate.** • **Certificate of Origin.** • **Inspection Certificate by a Government Agent.** • **Pre-Shipment Inspection Report by the Purchaser.** The above documents shall be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.
GCC 15.1	The prices charged for the Goods supplied and the related Services performed **Shall not** be adjustable.

GCC 16.1	GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows: **Payment for Goods supplied from abroad:** Payment of foreign currency portion shall be made in **currency of bid** in the following manner: (i) **Advance Payment:** The supplier may apply for the advance payment of **Ten (10)** percent of the Contract Price within Thirty (30) days of signing of the Contract, and upon submission of claim and a bank guarantee for equivalent amount valid until the Goods are delivered and, in the form, provided in the bidding document or another form acceptable to the Purchaser. Where the supplier does not apply for advance payment, the equivalent shall be payable on acceptance of the goods. **Note: The advance payment guarantee shall be from a commercial bank supervised by the Central Bank of Kenya.** (ii) **On Shipment:** Forty (**40**) percent of the Contract Price of the Goods shipped shall be paid upon submission of documents specified in GCC Clause 13. ➢ **Supplier invoice showing goods description, quantity, unit price and total amount- Original or a certified copy** ➢ **Bill of Lading/ Airway Bill –Original or a certified copy** ➢ **Packing list identifying content of each lot - Original or a certified copy** ➢ **Insurance Certificate - Original or a certified copy** ➢ **Manufacturers' or Suppliers Warranty Certificate - Original or a certified copy** ➢ **Pre - inspection report by the Purchaser** (iii) **(a) On delivery, installation, calibration, commissioning, training and final inspection at the project site for a firm that received advance payment:** Fifty (**50**) percent of the Contract Price of Goods

	received shall be paid within Sixty (60) days of receipt of the Goods upon submission of claim supported by the acceptance certificate issued by the Purchaser having carried out Installation, testing, training and commissioning of the equipment. **(b) On delivery, installation, calibration, commissioning, training and final inspection at the project site for a firm that did not receive advance payment:** Sixty (**60**) percent of the Contract Price of Goods received shall be paid within Sixty (60) days of receipt of the Goods upon submission of claim supported by the acceptance report issued by the Purchaser having carried out Installation, testing, training and commissioning of the equipment. **Payment for Goods and Services supplied from within the Purchaser's Country:** Payment for Goods and Services supplied from within the Purchaser's Country shall be made in **Kenya Shillings** as follows: (i) **Advance Payment:** The supplier may apply for the advance payment of **Ten (10)** percent of the Contract Price shall be paid within Thirty (30) days of signing of the Contract, and upon submission of claim and a bank guarantee for equivalent amount valid until the Goods are delivered and, in the form, provided in the bidding document or another form acceptable to the Purchaser. Where the supplier does not apply for advance payment, the equivalent shall be payable on acceptance of the goods. (ii) **(a) On delivery, installation, calibration, commissioning, training and final inspection at the project site for a firm that received advance payment:** Ninety (**90**) percent of the Contract Price shall be paid on receipt of the Goods and upon submission of the documents specified in GCC Clause 13.

	➢ **Supplier invoice showing goods description, quantity, unit price and total amount- Original or a certified copy** ➢ **Packing list identifying content of each lot- Original or a certified copy** ➢ **Insurance Certificate - Original or a certified copy** ➢ **Manufacturers' or Suppliers Warranty Certificate - Original or a certified copy** ➢ **Certificate of origin or a certified copy** ➢ **Inspection certificate by the Government Agent or a certified copy of the certificate** **(b) On delivery, installation, calibration, commissioning, training and final inspection at the project site for a firm that did not received advance payment** One Hundred (100) percent of the Contract Price of Goods received shall be paid within Sixty (60) days of receipt of the Goods upon submission of claim supported by the acceptance certificate issued by the Purchaser having carried out Installation, testing, training and commissioning of the equipment and upon submission of the document stated below: ➢ **Supplier invoice showing goods description, quality, unit price and total amount – original or a certified copy** ➢ **packing list identifying content of each lot – Original or a certified copy** ➢ **Insurance certificate or a certified copy** ➢ **Manufactures' or suppliers warranty certificate or a certified copy** ➢ **Certificate of origin or a certified copy** ➢ **Inspection certificate by the Government Agent or Kenya Bureau of standards certificate or a certified copy**

GCC 16.5	The payment-delay period after which the Purchaser shall pay interest to the supplier shall be **determined at the stage of the contract.** The interest rate that shall be applied is **determined at the stage of the contract.**
GCC 18.1	A Performance Security **shall be** required. The amount shall be: **10% of the contract value**
GCC 18.3	The Performance Security shall be in the form of: **Performance Guarantee from a reputable commercial bank supervised by the Central bank of Kenya. For foreign firms the performance Security from a foreign bank shall be confirmed by a reputable correspondent bank in Kenya supervised by the Central Bank of Kenya** If required, the Performance security shall be denominated in: **The currencies of payment of the Contract or a freely convertible currency acceptable to the Purchaser**
GCC 18.4	Discharge of the Performance Security shall take place: **not later than 60 days after completion of the supplier's performance obligations**

GCC 23.2	The packing, marking and documentation within and outside the packages shall be: ***GOVERNMENT OF KENYA (GOK)*** ***PURCHASER: MINISTRY OF EDUCATION, STATE DEPARTMENT FOR TECHNICAL, VOCATIONAL EDUCATION AND TRAINING*** ***BID NO: OCBI/TVETE PHASE III/EQUIP/48/24-25*** ***SUPPLIER……..*** ***GROSS WEIGHT……..*** ***PACKAGE NO……...*** ***In addition to the above marking, all delivered equipment must be branded: -*** ***"GOK/AfDB SUPPORT FOR TVET PROJECT- MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE"*** ***"GOK/AfDB SUPPORT FOR TVET PROJECT- AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE"***
GCC 24.1	The insurance coverage shall be as specified in the Incoterms **i.e in an amount equal to 110 percent of the CIP value of the goods from warehouse to warehouse on ALL risks basis including war risks and strikes**
GCC 25.1	Responsibility for transportation of the Goods shall be as specified in the Incoterms.
GCC 25.2	Related services to be provided are: **1. Equipment pre-inspection:** The supplier shall organize pre-inspection of equipment in the country of origin before shipping into the country **2. Training and Services Related to Equipment/Machines Supplied should include:**

	i. Training of members of the teaching staff and technicians on Major and Routine Maintenance of equipment/ Machines, ii. Training members of the teaching staff and technicians on Use of the machines/equipment (i.e the total scope of use equipment/machines and experiments they can perform) **3. Training manuals:** Bidders must provide hard copies and soft copies of Training manuals in English for the range of experiments/operation for each equipment/machines supplied **4. Installation, testing and commissioning of equipment/ machines:** Bidders must install, test, calibrate and commission the equipment supplied **5. Branding of equipment:** i. Each piece of equipment should be branded/tagged as follows: "GoK/AfDB TVETE III-MTTI …";followed by a serial number for Mechanical Engineering Equipment to Mukurweini Technical Training Institute "GoK/AfDB TVETE III-ATTI …";followed by a serial number for Automotive Engineering Equipment to Aldai Technical Training Institute ii. The branding/tagging words should be permanent and will be either engraved on a small metallic plate and riveted on metallic machines/equipment or engraved on the item.

GCC 26.1	The inspections and tests shall be: **i. certificate of origin** **ii. Inspection certificate by the Government Agent** **iii. Goods received in good order** **iv. Pre-Shipment Inspection by the Purchaser.** **v. Final Inspection by the Purchaser.**
GCC 26.2	The final Inspections and tests shall be conducted at: **the points of delivery which is:** **MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE – NYERI COUNTY** **AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE – NANDI COUNTY**
GCC 27.1	The liquidated damage shall be: **To be determined at the stage of the contracts.**
GCC 27.1	The maximum amount of liquidated damages shall be: **To be determined at the stage of contract.**
GCC 28.3	The period of validity of the Warranty shall be: **24 months from the date of completion of the contract.** For purposes of the Warranty, the place(s) of final destination(s) shall be: **MECHANICAL ENGINEERING EQUIPMENT TO MUKURWE-INI TECHNICAL TRAINING INSTITUTE – NYERI COUNTY** **AUTOMOTIVE ENGINEERING EQUIPMENT TO ALDAI TECHNICAL TRAINING INSTITUTE – NANDI COUNTY**
GCC 28.5, GCC 28.6	The period for repair or replacement shall be: **Thirty (30) days.**

Attachment: Price Adjustment Formula

If in accordance with GCC 15.1, prices shall be adjustable, the following method shall be used to calculate the price adjustment:

15.1 Prices payable to the Supplier, as stated in the Contract, shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components in accordance with the formula:

$$P_1 = P_0 \left[a + \frac{bL_1}{L_0} + \frac{cM_1}{M_0}\right] - P_0$$

$$a+b+c = 1$$

in which:

P_1 = adjustment amount.
P_0 = Contract Price (base price).
a = fixed element representing profits and overheads included in the Contract Price and generally in the range of five (5) to fifteen (15) percent.
b = estimated percentage of labor component in the Contract Price.
c = estimated percentage of material component in the Contract Price.
L_0, L_1 = *labor indices applicable to the appropriate industry in the country of origin on the base date and date for adjustment, respectively.
M_0, M_1 = *material indices for the major raw material on the base date and date for adjustment, respectively, in the country of origin.

The Bidder shall indicate the source of the indices, and the source of exchange rate (if applicable) and the base date indices in its Bid.

The coefficients a, b, and c as specified by the Purchaser are as follows:

a = *[insert value of coefficient]*
b = *[insert value of coefficient]*
c = *[insert value of coefficient]*

Base date = thirty (30) days prior to the deadline for submission of the Bids.

Date of adjustment = *[insert number of weeks]* weeks prior to date of shipment (representing the mid-point of the period of manufacture).

The above price adjustment formula shall be invoked by either party subject to the following further conditions:

(a) No price adjustment shall be allowed beyond the original delivery dates. As a rule, no price adjustment shall be allowed for periods of delay for which the Supplier is entirely responsible. The Purchaser will, however, be entitled to any decrease in the prices of the Goods and Services subject to adjustment.

(b) If the currency in which the Contract Price P_0 is expressed is different from the currency of origin of the labor and material indices, a correction factor will be applied to avoid incorrect adjustments of the Contract Price. The correction factor shall be: Z_0 / Z_1, where,

Z_0 = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price P_0 on the Base date, and

Z_1 = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price P_0 on the Date of Adjustment.

(c) No price adjustment shall be payable on the portion of the Contract Price paid to the Supplier as advance payment.

Section X - Contract Forms

Table of Forms

Notification of Intention to Award

[*Send this Notification to the Bidder's Authorized Representative named in the Bidder Information Form*]

For the attention of Bidder's Authorized Representative

Name: *[insert Authorized Representative's name]*

Address: *[insert Authorized Representative's Address]*

Telephone/Fax numbers: *[insert Authorized Representative's telephone/fax numbers]*

Email Address: *[insert Authorized Representative's email address]*

DATE OF TRANSMISSION: This Notification is sent by: [*email/fax*] on [*date*] (local time)

Notification of Intention to Award

Purchaser: *[insert the name of the Purchaser]*
Project: *[insert name of project]*
Contract title: *[insert the name of the contract]*
Country: *[insert country where IFB is issued]*
Loan No. /Credit No. / Grant No.: *[insert reference number for loan/credit/grant]*
OCBI / LCB No: *[insert OCBI reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period you may:

a) request a debriefing in relation to the evaluation of your Bid, and/or

b) submit a Procurement-related Complaint in relation to the decision to award the contract.

1. The successful Bidder

Name:	[*insert name of successful Bidder*]
Address:	[*insert address of the successful Bidder*]

Contract price:	[*insert contract price of the successful Bid*]

2. Other Bidders

Name of Bidder	Bid price	Evaluated Bid price (if applicable)
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]
[*insert name*]	[*insert Bid price*]	[*insert evaluated price*]

3. Reason/s why your Bid was unsuccessful

[INSTRUCTIONS: State the reason/s why <u>this</u> Bidder's Bid was unsuccessful. Do NOT include: (a) a point by point comparison with another Bidder's Bid or (b) information that is marked confidential by the Bidder in its Bid.]

4. How to request a debriefing

DEADLINE: The deadline to request a debriefing expires at midnight on [*insert date*] (local time).

You may request a debriefing in relation to the results of the evaluation of your Bid. If you decide to request a debriefing your written request must be made within three (3) Business Days of receipt of this Notification of Intention to Award.

Provide the contract name, reference number, name of the Bidder, contact details; and address the request for debriefing as follows:

Attention: [*insert full name of person, if applicable*]

Title/position: [*insert title/position*]

Agency: [*insert name of Purchaser*]

Email address: [*insert email address*]

Fax number: [*insert fax number*] ***delete if not used***

If your request for a debriefing is received within the 3 Business Days deadline, we will provide the debriefing within five (5) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (5) Business Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.

The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.

If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Business Days from the date of publication of the Contract Award Notice.

5. How to make a complaint

Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [*insert date*] (local time).

Provide the contract name, reference number, name of the Bidder, contact details; and address the Procurement-related Complaint as follows:

Attention: [*insert full name of person, if applicable*]

Title/position: [*insert title/position*]

Agency: [*insert name of Purchaser*]

Email address: [*insert email address*]

Fax number: [*insert fax number*] ***delete if not used***

At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

Further information:

For more information see the Bank's Procurement Framework

In summary, there are four essential requirements:

1. You must be an 'interested party'. In this case, that means a Bidder who submitted a Bid in this bidding process, and is the recipient of a Notification of Intention to Award.
2. The complaint can only challenge the decision to award the contract.
3. You must submit the complaint within the period stated above.
4. You must include, in your complaint, all of the information required by the Procurement Framework.

6. Standstill Period

DEADLINE: The Standstill Period is due to end at midnight on [*insert date*] (local time).

The Standstill Period lasts ten (10) Business Days after the date of transmission of this Notification of Intention to Award.

The Standstill Period may be extended as stated in Section 4 above.

If you have any questions regarding this Notification please do not hesitate to contact us.

On behalf of the Purchaser:

Signature: _____

Name: _____

Title/position: _____

Telephone: _____

Email: _____

Beneficial Ownership Disclosure Form

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful Bidder. In case of joint venture, the Bidder must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Bidder is any natural person who ultimately owns or controls the Bidder by meeting one or more of the following conditions:

directly or indirectly holding 25% or more of the shares
directly or indirectly holding 25% or more of the voting rights
directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder

OCBI / LCB No.: [*insert number of bidding process.*]
Invitation for Bid No.: [*insert identification*]

To: **[*insert complete name of Purchaser*]**

In response to your request in the Letter of Acceptance *dated [insert date of letter of Acceptance]* to furnish additional information on beneficial ownership: *[select one option as applicable and delete the options that are not applicable]*

(i) we hereby provide the following beneficial ownership information.

Details of beneficial ownership

Identity of Beneficial Owner	Directly or indirectly holding 25% or more of the shares (Yes / No)	Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No)	Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent

			governing body of the Bidder (Yes / No)
[include full name (last, middle, first), nationality, country of residence]			

OR

(ii) *We declare that there is no Beneficial Owner meeting one or more of the following conditions:*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder

OR

(iii) We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Bidder shall provide explanation on why it is unable to identify any Beneficial Owner]

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder]"

Name of the Bidder: *[*insert complete name of the Bidder*]

Name of the person duly authorized to sign the Bid on behalf of the Bidder: **[*insert complete name of person duly authorized to sign the Bid*]

Title of the person signing the Bid: [*insert complete title of the person signing the Bid*]

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]* _____

Date signed [*insert date of signing*] **day of** [*insert month*], [*insert year*]

* In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder. In the event that the Bidder is a joint venture, each reference to

"Bidder" in the Beneficial Ownership Disclosure Form (including this Introduction thereto) shall be read to refer to the joint venture member.

** Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Letter of Acceptance

[use letterhead paper of the Purchaser]

[date]

To: *[name and address of the Supplier]*

Subject: ***Notification of Award Contract No.*** . . . .

This is to notify you that your Bid dated ***[insert date]*** for execution of the ***[insert name of the contract and identification number, as given in the SCC]*** for the Accepted Contract Amount of ***[insert amount in numbers and words and name of currency]***, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish (i) the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose one of the Performance Security Forms and (ii) the additional information on beneficial ownership in accordance with BDS ITB 45.1 within eight (8) Business days using the Beneficial Ownership Disclosure Form, included in Section X, - Contract Forms, of the Bidding Document.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement

Contract Agreement

[The successful Bidder shall fill in this form in accordance with the instructions indicated]

THIS AGREEMENT made the *[insert: **number**]* day of *[insert: **month**]*, *[insert: **year**]*.

BETWEEN

(1) *[insert complete name of Purchaser]*, a *[insert description of type of legal entity, for example, an agency of the Ministry of .... of the Government of {insert name of Country of Purchaser}, or corporation incorporated under the laws of {insert name of Country of Purchaser}]* and having its principal place of business at *[insert address of Purchaser**]*** (hereinafter called "the Purchaser"), of the one part, and

(2) *[insert name of Supplier**]***, a corporation incorporated under the laws of *[insert: country of Supplier**]*** and having its principal place of business at *[insert: address of Supplier]* (hereinafter called "the Supplier"), of the other part:

WHEREAS the Purchaser invited Bids for certain Goods and ancillary services, viz., *[insert brief description of Goods and Services]* and has accepted a Bid by the Supplier for the supply of those Goods and Services

The Purchaser and the Supplier agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other contract documents.

   (a) the Letter of Acceptance

   (b) the Letter of Bid

   (c) the Addenda Nos._____ (if any)

   (d) Special Conditions of Contract

   (e) General Conditions of Contract

   (f) the Specification (including Schedule of Requirements and Technical Specifications)

   (g) the drawings

(h) the completed Schedules (including Price Schedules)

(i) any other document listed in GCC as forming part of the Contract

3. In consideration of the payments to be made by the Purchaser to the Supplier as specified in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of *[insert the name of the Contract governing law country]* on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed: *[insert signature]* _____
in the capacity of *[insert title or other appropriate designation]*
In the presence of *[insert identification of official witness]*

For and on behalf of the Supplier

Signed: *[insert signature of authorized representative(s) of the Supplier]*
_____
in the capacity of *[insert title or other appropriate designation]*
in the presence of *[insert identification of official witness]*

Performance Security

Option 1: (Bank Guarantee)

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insert name and Address of Purchaser]*
Date: *[Insert date of issue]*
PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*
Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _ *[insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the supply of _ *[insert name of contract and brief description of Goods and related Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant to issue this guarantee, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* (_____) *[insert amount in words]*,[191] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2…[202], and any demand for payment under it must be received by us at this office indicated above on or before that date.

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[191] The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, and denominated either in the currency (ies) of the Contract or a freely convertible currency acceptable to the Beneficiary.

[202] Insert the date twenty-eight days after the expected completion date as described in GC Clause 18.4. The Purchaser should note that in the event of an extension of this date for completion of the Contract, the Purchaser would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

prior to the expiration date established in the guarantee. In preparing this guarantee, the Purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Option 2: Performance Bond

By this Bond *[insert name of Principal]* as Principal (hereinafter called "the Supplier") and *[insert name of Surety]* as Surety (hereinafter called "the Surety"), are held and firmly bound unto *[insert name of Purchaser]* as Obligee (hereinafter called "the Purchaser") in the amount of *[insert amount in words and figures]specified as the penal sum of this Bond*, for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Supplier and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Supplier has entered into a written Agreement with the Purchaser dated the _____ day of , 20 __, for *[name of contract and brief description of Goods and related Services]* in accordance with the documents, plans, specifications, and amendments thereto, which to the extent herein provided for, are by reference made part hereof and are hereinafter referred to as the Contract.

NOW, THEREFORE, the Condition of this Obligation is such that, if the Supplier shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Supplier shall be, and declared by the Purchaser to be, in default under the Contract, the Purchaser having performed the Purchaser's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

(1) complete the Contract in accordance with its terms and conditions; or

(2) obtain a Bid or Bids from qualified Bidders for submission to the Purchaser for completing the Contract in accordance with its terms and conditions, and upon determination by the Purchaser and the Surety of the lowest responsive Bidder, arrange for a Contract between such Bidder and Purchaser and make available as supply progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the specified penal sum set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Purchaser to Supplier

under the Contract, less the amount properly paid by Purchaser to the Supplier; or

(3) pay the Purchaser the amount required by Purchaser to complete the Contract in accordance with its terms and conditions up to a total not exceeding the specified penal sum of this Bond.

The Surety shall not be liable for a greater sum than the specified penal sum of this Bond.

Any suit under this Bond must be instituted before the expiration of one year from the date of completion of the contract.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Purchaser named herein or the heirs, executors, administrators, successors, and assigns of the Purchaser.

In testimony whereof, the Supplier has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this _____ day of _____ 20 _____.

SIGNED ON _____ on behalf of _____

By _____ in the capacity of _____

In the presence of _____

SIGNED ON _____ on behalf of _____

By _____ in the capacity of _____

In the presence of _____

Advance Payment Security

Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[Insert name and Address of Purchaser]*
Date: *[Insert date of issue]*
ADVANCE PAYMENT GUARANTEE No.:*[Insert guarantee reference number]*
Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the execution of *[insert name of contract and brief description of Goods and related Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum *[insert amount in figures]* () *[insert amount in words]* is to be made against an advance payment guarantee.

At the request of the Applicant to issue this guarantee, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* (_____) *[insert amount in words]*[211] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:

(a) has used the advance payment for purposes other than toward delivery of Goods; or

(b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

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[211] The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Purchaser.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Applicant on its account number *[insert number]* at *[insert name and address of Applicant's bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, has been certified for payment, or on the *[insert day]* day of *[insert month]*, 2 *[insert year]*, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No.758, except that the supporting statement under Article 15(a) is hereby excluded.

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[signature(s)]