



Republic of the Philippines
CIVIL AVIATION AUTHORITY OF THE PHILIPPINES

REPLACEMENT OF DIESEL ENGINE GENERATOR SET (DEGS) AT MACTAN-AFC

BID NO. 25-09-02 ALPHA

Date of Issue of Bid Docs

For Posting (rev A)

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Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

Contractor – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

Foreign-funded Procurement or Foreign-Assisted Project – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term “related” or “analogous services” shall include, but is not limited to, lease or purchase of office space, media advertisements, health

maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid



Republic of the Philippines

CIVIL AVIATION AUTHORITY OF THE PHILIPPINES

Invitation to Bid for
**REPLACEMENT OF DIESEL ENGINE GENERATOR SET (DEGS)
AT MACTAN AFC**

Bid No. 25-09-02 ALPHA

1. The Civil Aviation Authority of the Philippines through the Corporate Operating Budget CY 2025 Project intends to apply the sum of Fourteen Million One Hundred Seventy-Six Thousand Two Hundred Fifty-Five Pesos and 10/100 (Php 14,176,255.10) being the Approved Budget for the Contract (ABC) to payments under the contract for Replacement of Diesel Engine Generator (DEGS) at Mactan AFC (Bid No. 25-09-02 ALPHA). Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The Civil Aviation Authority of the Philippines now invites bids for the above Procurement Project. Completion of the Works is required within One Hundred Fifty (150) Calendar Days upon receipt of the NOTICE TO PROCEED. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).
3. Bidding will be conducted through open competitive bidding procedures using non-discretionary “pass/fail” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information from the Civil Aviation Authority of the Philippines and inspect the Bidding Documents at the address given below from Monday to Friday, 8:00 AM to 5:00 PM.
5. A complete set of Bidding Documents may be acquired by interested bidders on 28 February 2025 until the deadline of submission of bid from the given address and website/s below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of PHP25,000.00 (**exclusive of any and all taxes imposed by relevant government agencies**). The Procuring Entity shall allow the bidder to present its proof of payment for the fees by presenting the official receipt in person.
6. The Civil Aviation Authority of the Philippines will hold a Pre-Bid Conference¹ on March 11, 2025 @ 9:30 AM through video conferencing/webcasting via Zoom/Google Meet, which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below on or before **March 25, 2025 @ 9:30 AM**. Late bids shall not be accepted.
8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.
9. Bid opening shall be **March 25, 2025 @ 9:30 AM** at the given address below and/or through Zoom or Google Meet. Bids will be opened in the presence of the bidders’ representatives who choose to attend the activity.

¹ May be deleted in case the ABC is less than One Million Pesos (PhP1, 000,000) where the Procuring Entity may not hold a pre-bid conference.

10. The Civil Aviation Authority of the Philippines reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.
11. Upon payment of the bid documents, bidders must provide their respective email addresses to the BAC Secretariat. All communications, including but not limited to Notices, Resolutions, and Replies, among others, will be sent to the email address provided by the bidders. The date when such email was sent shall be considered the date of receipt of the bidder/s for purposes of complying with the requirements under RA 9184
12. For further information, please refer to:

ENGR. LEANDRO R. VARQUEZ
Head, BAC Secretariat
BAC Office
3rd Floor Supply, Procurement Building
CAAP Compound,
MIA Road corner Ninoy Aquino Avenue, 1300 Pasay City
Telephone No.: (02) 8246-4988 loc. 2236
Email address: bac@caap.gov.ph
www.caap.gov.ph
13. You may visit the following websites:
For downloading of Bidding Documents: www.caap.gov.ph

ATTY. ROBERTO MARTIN S. BUENAVENTURA
Vice-Chairperson, Bids & Awards Committee-
Alpha

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, Civil Aviation Authority of the Philippines invites Bids for the REPLACEMENT OF DIESEL ENGINE GENERATOR SET (DEGS) AT MACTAN AFC with Project Identification Number: **Bid No. 25-09-02 ALPHA**.

The Procurement Project (referred to herein as "Project") is for the construction of Works, as described in Section VI (Specifications).

2. Funding Information

2.1. The GOP through the source of funding as indicated below for CY 2025 in the amount of Fourteen Million One Hundred Seven-Six Thousand Two Hundred Fifty-Five Pesos and 10/100 (Php 14,176,255.10).

2.2. The source of funding is GOCC and GFIs, the proposed Corporate Operating Budget

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

- 5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be “similar” to the contract to be bid if it has the major categories of work stated in the **BDS**.

- 5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

7. Subcontracts

- 7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address and/or through videoconferencing/webcasting as indicated in paragraph 6 of the **IB**.

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents Comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

- 10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- 10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.
- 10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.
- 10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

13. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

14. Bid and Payment Currencies

- 14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

Payment of the contract price shall be made in Philippine Pesos.

15. Bid Security

- 15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.
- 15.2. The Bid and bid security shall be valid until *[indicate date]*. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

Each Bidder shall submit one (1) copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

17. Deadline for Submission of Bids

The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB**.

18. Opening and Preliminary Examination of Bids

- 18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

- 18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

- 19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.
- 19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.
- 19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause																						
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: Electrical and/or Mechanical Works																					
7.1	Subcontracting is not allowed.																					
10.3	<p>A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project</p> <p>Bidder shall meet the following financial requirements for license categorization; Single Largest Project completed (SLP); and Allowable Ranges of Contract Cost (ARCC) for registration of contractors for government projects; these requirements shall be submitted together with the Bid.</p> <p>License Categorization – Specialty, SP-EE (Electrical Work) or SP-ME (Mechanical Work) or SP-EM (Electro-Mechanical Works) SLP / ARCC - Small B / Category C & D</p> <p>Bids not complying with the above instructions shall be disqualified</p>																					
10.4	<p>The key personnel must meet the required minimum years of experience set below:</p> <table><tr><td><u>Key Personnel</u> Project Engineer Electrical Engineer Mechanical Engineer Foreman Crane Operator Crane Rigger Safety and Health Officer</td><td><u>General Experience</u> Five (5) years in Electrical Engineering and/or Mechanical Engineering</td><td><u>Relevant Experience</u> Three (3) years in Construction/Installation of Electrical and/or Mechanical Works</td></tr></table> <p>Bids not complying with the above instruction shall be disqualified.</p>	<u>Key Personnel</u> Project Engineer Electrical Engineer Mechanical Engineer Foreman Crane Operator Crane Rigger Safety and Health Officer	<u>General Experience</u> Five (5) years in Electrical Engineering and/or Mechanical Engineering	<u>Relevant Experience</u> Three (3) years in Construction/Installation of Electrical and/or Mechanical Works																		
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10.5	<p>The minimum major equipment requirements are the following:</p> <table><tr><td>Quantity/Unit</td><td>Capacity</td><td>Equipment/Tools</td></tr><tr><td>1 lot</td><td></td><td>Welding Machine</td></tr><tr><td>1 lot</td><td></td><td>Bar Cutter</td></tr><tr><td>1 lot</td><td></td><td>Hydraulic Crimping Tool</td></tr><tr><td>1 lot</td><td></td><td>Telescopic Crane</td></tr><tr><td>1 set</td><td></td><td>Power Tools</td></tr><tr><td>2 set</td><td></td><td>Multi-tester</td></tr></table> <p>Bids not complying with the above instruction shall be disqualified.</p>	Quantity/Unit	Capacity	Equipment/Tools	1 lot		Welding Machine	1 lot		Bar Cutter	1 lot		Hydraulic Crimping Tool	1 lot		Telescopic Crane	1 set		Power Tools	2 set		Multi-tester
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1 set		Power Tools																				
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15.1	<p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <p>a. The amount of not less than two percent (2%) of ABC or Php 283,525.10 if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit;</p> <p>b. The amount of not less than five percent (5%) of ABC or Php 708,812.75 if bid security is in Surety Bond.</p>																					

16	<p>1. Each and every page thereof shall be initialed/signed by the duly authorized representative/s of the Bidder.</p> <p>Submitted Eligibility, Technical, and Financial documents shall be properly marked with index tabs (ear tab) and must be sequentially paginated in accurate order in the form i.e. "page 3 of 100". Page number of last page of the document (per envelope basis). Pagination should be sequential based on the entire span of the whole documents inside the envelope.</p> <p>Bids not complying with the above instruction shall be disqualified</p> <p>2. Each Bidder shall submit one (1) original bid.</p>
19.2	Partial bid is not allowed. The infrastructure project is packaged in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
20	<p>The Bidder with the Lowest Calculated Bid (LCB) that complies with and is responsive to all the requirements and conditions shall submit its</p> <ol style="list-style-type: none"> 1. Latest income and business tax returns filed through the Electronic Filing and Payment System (EFPS); 2. Key personnel licenses 3. Certificate of Site Inspection duly signed by Air Navigation Service (ANS) Facility-in-Charge or his/her duly authorized representative with the following documents as attachment; (a) Copy of company ID of the person who conducted the site inspection (b) Copy of the airport/facility visitor's logbook appearing the names and signatures of inspectors (c) Pictures of the proposed site including the personnel who conducted the site inspection together with the ANS Facility-in-Charge or his/her duly authorized representative 4. Bid bulletin (if any) <p>Failure to submit any of the post-qualification requirements on time, or a finding against the veracity thereof, shall disqualify the bidder for award. Provided, that in the event that a finding against the veracity of any of the documents submitted is made, it shall cause the forfeiture of the Bid Security in accordance with Section 69 of the IRR of RA 9184.</p>
21	<p>The following relevant project documents are required to be submitted by the successful bidder who submitted the LCRB as part of the Contract Agreement during its signing:</p> <ol style="list-style-type: none"> a) Construction schedule b) Bar Chart & S-curve c) PERT/CPM Network Diagram d) Manpower schedule e) Construction methods f) Equipment utilization schedule g) Shop or construction drawing h) Construction Safety & Health Programs approved by the Department of Labor & Employment for the Replacement of Diesel Engine Generator Set (DEGS) at Mactan AFC Cebu, Philippines.

Section IV. General Conditions of Contract

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

2. Sectional Completion of Works

If sectional completion is specified in the Special Conditions of Contract (SCC), references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. Possession of Site

3.1 The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC**, which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

3.2 If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

5. Performance Security

5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

- 5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

7. Warranty

- 7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.
- 7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

8. Liability of the Contractor

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines. If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

9. Termination for Other Causes

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

10. Dayworks

Subject to the guidelines on Variation Order in Annex "E" of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

11. Program of Work

- 11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC**.
- 11.2. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC**. If the Contractor does not submit an updated Program of

Work within this period, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

12. Instructions, Inspections and Audits

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

13. Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC**, subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

14. Progress Payments

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity's Representative/Project Engineer. Except as otherwise stipulated in the **SCC**, materials and equipment delivered on the site but not completely put in place shall not be included for payment.

15. Operating and Maintenance Manuals

- 15.1. If required, the Contractor will provide "as built" Drawings and/or operating and maintenance manuals as specified in the **SCC**.
- 15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the SCC from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
2	Not applicable.
3.1	The CIVIL AVIATION AUTHORITY OF THE PHILIPPINES shall give possession of all parts of the Site to the Contractor upon receipt of the Notice to Proceed.
6	Certificate of Inspection signed by FIC or his/her representative.
7	<p>The project has a total of two (2) year warranty period. The warranty covers 1-year full warranty service also known as <i>defective liability period, DLP</i> (includes labor & parts replacement) upon completion of the project then followed by another 1-year Service Warranty Period which only covers labor services.</p> <p>Note: Warranty <i>would not</i> apply for consumables items. (e.g. fuel, oil, and filters)</p>
10	No dayworks are applicable to the contract.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within seven (7) days of delivery of the Notice of Award
11.2	The amount to be withheld for late submission of an updated Program of Work is the price amount of the contract.
13	No mobilization fees or advance payment shall be granted. Payments shall be made only upon verified/actual progress of work, subject to inspection and acceptance by the Procuring entity.
14	No further instructions.
15.1	<p>Operation and Maintenance Manuals shall be submitted to the procuring entity upon completion of the project</p> <p>An as built plan signed and sealed by a professional electrical or mechanical engineer shall be submitted to the procuring entity together with a soft copy (AutoCAD / PDF) upon completion of the project.</p>
15.2	The amount to be withheld for failing to produce "as built" drawings and the operating & maintenance manuals by the date required is two percent (2%) of the contract price.

Section VI. Specifications

Scope of Work / Technical Specifications

REPLACEMENT OF DIESEL ENGINE GENERATOR SET (DEGS) AT MACTAN - AFC

A. OBJECTIVE AND BACKGROUND

- The Project aims to install a new two (2) 320kVA Diesel Engine Generator Set (Genset) that will automatically provide back-up power to Mactan AFC Building during commercial power outage. Either one (1) of two (2) generators can perform as duty or standby through manual selector switch, ensuring that one of them can start automatically when commercial power failure occurs.

B. PROJECT DURATION

- The contract duration shall be One Hundred Fifty (150) calendar days upon receipt of Notice to Proceed.
- Delay in the delivery shall be subject for penalties.

C. SCOPE OF WORKS

C.0

INITIAL REQUIREMENTS/PROJECT SCOPE

- Upon receipt of the Notice-to-Proceed (NTP), the Contractor is required to submit the construction design drawings and installation plans for review by CAAP before proceeding with implementation. As-built drawings must also be submitted immediately after the end of the project.
- The equipment and its associated ancillary components that are to be delivered and installed must fulfill the following conditions: latest model, not previously used, not second-hand, and in brand new condition.
- The CAAP mandates that non-OEM bidders (whether acting as a sole bidder or as a joint venture partner) requires that the bidder must be either an exclusive or authorized distributor of the procured equipment, and must possess an after-sales support capability agreement with the OEM.
- The Contractor, or their authorized representative, is required to obtain a certificate of site inspection from the ANS Facility-In-Charge or an authorized representative at the CAAP Mactan International Airport prior to commencing any work at the site.
- The Contractor must prioritize the health and safety of workers and the public while complying with all relevant regulations and standards. This requires the implementation of a comprehensive safety program that includes hazard identification, risk assessment, and control measures. All workers and stakeholders should receive proper training and have access to necessary personal protective equipment. The worksite should be regularly monitored and evaluated for safety performance."

- C.1 General Requirements**
- Mobilization and demobilization
 - LGU Permits, DENR and other necessary permits required, etc.
- C.2** Supply, Delivery, Installation, Testing and Commissioning of Two (2) Units Brand New 320kVA/256kW (Prime Rated), 3-Phase, 220V/127V, 60Hz Diesel Engine Generator Set (Open Frame/Type) Including Exhaust Pipe/Muffler, Fuel Line System and Accessories.
- C.3** Design/Fabrication, Supply, Delivery and Installation of Generator Sets Automatic Transfer Switch (GEN-1/GEN-2), MCCB's Protection, Power Cable, Grounding and Accessories
- C.4** Design/Fabrication, Supply, Delivery and Installation of Low Voltage Switchgear including Automatic Transfer Switch (Normal/Generator), MCCB's protection, power cable, accessories and connection to the existing low voltage panels.
- C.5** Site Works
- Supply of labor, tools, supervision, equipment and materials needed for the removal of existing generator sets and electrical panels, etc.
 - Replacement of Generator, panels, power cables and grounding system
- C.6** Training and FAT
- "On-Site Facility Training is available for up to 10 participants, with a total of 40 hours of instruction. The training combines both theoretical and practical components, covering key topics such as the fundamentals of the DEGS System, basic operations, preventive maintenance, and corrective maintenance
 - "Factory Acceptance Test (FAT) at least 3 CAAP representatives with minimum of five (5) days factory site visit [inclusive of travel time]
- C.7** Miscellaneous
- Tools and Spare Parts
Supply and delivery of required tools for the Generator but not limited to: socket wrench set, 12 point combination wrench, 10" long -Combination plier, 10" long -Adjustable wrench, 10" long -Allen wrench, 1 set -Torque wrench, 1/2 drive 400psi, Screw drivers Hammer(flat and Philipps), Hammer, Feeler gauge -Grease gun, Puller -Super wrench or equivalent, Special tools for overhauling and re-assembly of turbocharger, Crimping tools, AC-DC Clamp Meter (0-1000V), Long Nose Plier 6 1/2" long, Vise grip, Tongue and Grove pliers, Precision Screwdrivers, Ear Muff-2 set, heavy duty tool box and one (1) lot necessary tools recommended by manufacturer.

Supply and delivery of required spare parts for the Generator but not limited to: one (1) complete set of speed relay, one (1) complete set of AVR, two (2) complete set of battery charger,

Supply and delivery of required spare parts for the Diesel Engine Generator but not limited to: two (2) sets of Filters (fuel, oil, air and water-separator), two (2) sets of belts (fan, water pump, oil pressure unit, and one (1) lot of other spare parts recommended by the manufacturer.

C.7

SITE INSPECTION

The contractor is recommended to perform a comprehensive site survey to assess and confirm the pertinent local conditions and facilities that could potentially impact the execution of the project.

C.8

PERMITS AND CLEARANCES

The contractor is responsible for securing the necessary labor and materials for the above-mentioned works and facilitating the payment to the Local Electric Cooperative of Mactan, Cebu. The contractor shall be responsible for obtaining the necessary permits, including those from the Municipal government, the Department of Environment and Natural Resources (if any), and the electrical authority, at no additional cost to the procuring entity.

C.9

INJURY TO PERSON OR DAMAGE TO PROPERTY

The contractor has a duty to ensure the safety of all individuals and to prevent any damage to property in the course of their work or through the actions of their employees. In the event of any injury to persons or damage to property, the contractor shall be held responsible and shall be accountable for addressing any claims made against the Employer as a result of such injury and/or damage.

C.10

MATERIALS

The materials to be supplied or installed must be brand new and meet the specified requirements, unless indicated otherwise in the plans. For materials without specific requirements, the highest quality available must be used. Samples of these materials must be submitted for approval.

C.11

WORKMANSHIP

The work must be performed to the highest standards and to the complete satisfaction of the Engineer/Project In-charge, who has the authority to reject any work or materials that do not meet the specifications and plans. The work must be carried out under the direction of the Engineer/Project In-charge.

C.12

TEMPORARY FACILITY/ELECTRICITY AND WATER

The contractor must supply temporary accommodations for the workers assigned at the job site. The temporary housing should be made of wooden material with a galvanized iron roof and must include cabinets for a first-aid kit and a fire extinguisher. The contractor is responsible for making arrangements and covering the costs for electrical power and water to the temporary facilities

C.13**MANUFACTURER'S DATA**

The contractor must provide the following information for each item listed, but not limited to;

- Manufacturer's detailed information and catalogues for the products
- Equipment drawings and diagrams
- Performance and characteristics curve of the items, including

- (1) Diesel Engine Generator Set
- (2) Automatic Transfer Switch and Low Voltage Switchgear
- (3) Cables and/or bus ducts.

C.14**MANUFACTURER'S INSTRUCTION**

The contractor must supply the manufacturer's guidelines for the installation of the high voltage cable including instructions for tapping and jointing as well as for the installation of HV termination kits.

C.15**FIELD TEST REPORT**

At least seven (7) days prior to carrying out any testing or commissioning work for the contractor shall submit a complete set of typical test record, type of test to be conducted, time table for the testing and equipment to be tested/commissioned for review by the project in-charge or engineer.

The contractor must provide calibration procedures for all test instrument proposed to be used in testing.

C.16**SPARE PARTS**

Upon the approval of materials and equipment, the contractor must present a list of recommended spare parts for a three-year usage of each major piece of equipment supplied by CAAP. The list includes the current unit price and details of the supply source.

C.17**OPERATION AND MAINTENANCE MANUAL**

The contractor is obligated to furnish the necessary Operation and Maintenance Manuals covering all systems and equipment as outlined in the scope of work.

- The contractor must provide three (3) bound copies of the Manual, either in binders or equivalent and in soft copy (pdf format). The cover shall display the following information; "OPERATION AND MAINTENANCE MANUAL", the name of the system or equipment, the building name, the contractor's name, and contact number.
- A table of contents and relevant tabs should be included to conform to the organization of the manual, and the manual should include the following information;
 - Internal and interconnecting wiring and control diagrams with details explaining the operation and control of the system or equipment
 - A control sequence for start-up, operation, and shutdown

- A description of the function of each key piece of equipment
- Installation and Maintenance Instructions
- Safety precautions
- Diagrams and illustrations
- Testing methods.
- Performance Data
- Part list
- Manufacturer's recommendations on Maintenance Schedule (equipment parts replacement)

C.18

MATERIALS AND EQUIPMENT REQUIREMENTS

- All materials and equipment to be supplied shall be in accordance with the requirements in the Specifications.
- The contractor shall be responsible for ordering the correct and sufficient quantities of cables and equipment.
- All materials and equipment to be provided shall be brand new and in accordance with CAAP Specifications and the latest Edition of Philippine Electrical Code (PEC), Part 1, American Society for Testing and Materials (ASTM), National Electrical Manufacturers Association Standard (NEMA), Underwriters Laboratories (UL) Philippine Standards (PS) or any approved equivalent standards.
- The manufacturer of the materials and equipment shall be open to inspection by the CAAP or his representative in the course of manufacture of the materials or equipment or after they have been completed.
- Any materials or equipment found on such inspection not meeting the requirements of relevant standards, or of these specifications shall be rejected by CAAP.

C.19

LABELS

- All Circuit Breaker and other apparatus and controls shall be labelled in accordance with the requirements of this specifications.
- All label shall be Polycarbonate plastic or approved equal, engrave black lettering on white.
- Major equipment items shall be fitted with a main label mounted in a prominent position.
- Labels shall be secured with brass screws or steel screws which have been rust proofed in an approved manner.
- Labels shall designate circuit number and equipment function.
- Appropriately worded and sized warning labels engraved white on red shall be fastened to all covers or panels giving access to live equipment. Panels giving access to equipment at voltages of 500V and above shall additionally warn "DANGER – HIGH VOLTAGE".
- Terminal strips shall be labelled to identify the circuit number, phase connection, terminal number and function – e.g. control, indication, protection, etc.

C.20**CODES, INSPECTION, PERMITS, AND FEES**

- The work under this Contract shall be REPLACEMENT OF DIESEL ENGINE GENERATOR SET (DEGS) AT MACTAN AFC, Mactan International Airport in accordance with the requirements of the latest edition of Philippine Electrical Code, Part 1 and the Mactan Electric Company (MECO). Nothing contained in the specifications or shown on the drawings shall be construed in conflict with the National and Local Ordinances or Laws, governing the installation of electrical work and all such laws and ordinances are hereby made part of these Specifications.
- All permits and electrical fees required for this work for this contract, shall be obtained by and at the expense of the Contractor. The contractor shall furnish CAAP final certificate of inspection and approval from the proper government authorities after the completion of the work. The contractor shall prepare all "AS BUILT" drawings (signed and sealed by Professional Electrical Engineer) and all other paper works required by CAAP.
- The contractor shall contact Mactan Electric Company (MECO) and discuss the connection method, schedule and fees, necessary materials specified in the Specification shall be furnished to them. Connection fee shall be paid in accordance with pay item in the Bill of Quantities.

C.21**GUARANTEE**

The contractor is responsible for ensuring that the electrical systems are free from any unintended grounding, poor workmanship, and defective materials, and this guarantee shall remain valid for a period of **two years from the issuance of the Certificate of Completion**. Should any defects arise within this timeframe, the contractor must rectify them at their own cost and without receiving further compensation

C.22**ELECTRICAL EQUIPMENT AND MATERIALS**

Unless indicated or specified otherwise, install materials and equipment in accordance with the standards, codes, and regulation listed in the specification. Install all equipment in strict conformance with manufacturer's instruction and recommendation

C.23**INSTALLATION**

Installation work shall conform to the requirement of Philippine Electrical Code (PEC) and National Fire Protection Association (NFPA) 70, Standard for Electrical Safety in workplace. Unloading, moving, and installation of equipment shall be under the direct supervision of a competent and experienced installation engineer. Throughout the course of the construction project, the contractor is required to maintain a meticulous record of any variations from the drawings in regards to the actual installation. The contractor must document all changes and updates made to the original design as incorporated into the final construction. These records must be submitted to the CAAP for evaluation and endorsement. Once approved, the contractor must provide the CAAP with a comprehensive set of As-Built drawings signed and sealed by PEE/ME, both in electronic format and hard copy

C.24**COORDINATION**

The contractor is obliged to collaborate fully and work in conjunction with other contractors in instances where their work is interrelated with other sections of the building.

C.25**ORIGINAL EQUIPMENT MANUFACTURER (OEM)
DISTRIBUTORSHIP CERTIFICATE**

The procuring entity seek to ensure that the contractor has legal authorization or exclusive rights to distribute and sell the main product, thus CAAP requires the contractor to provide an Exclusive or Authorized OEM Distributorship Certificate duly notarized by the Philippine Consulate in the country of origin of the main product to be shipped.

C.26**FACTORY ACCEPTANCE TEST (FAT)**

The diesel engine generator shall be completely assembled at the factory and to ensure that a product meets the required quality and performance standards before it is shipped to the installation site, a FAT is necessary to measure the generator's performance. The following items shall be part of the project;

- Contractor must provide details of testing location, schedule of activities, and activities to witness the factory test
- FAT must be conducted at the manufacturing site in five (5) calendar days prior to shipment/delivery to the installation site.
- At least three (3) CAAP technical personnel or representatives of the procuring entity shall be invited to witness any and all testing at the Contractor's expense (including visa processing, air fares, accommodations, food, accident insurance, and per diem allowances based on UNDP Daily Subsistence Allowance DSA for the country of visit).
- The contractor shall be in charge in facilitating and coordinating with its distributor (OEM) in arranging the above matter.
- The following factory test shall be conducted in accordance with the industry standards
 - A. Generator with Exciter and All Panels
 - Verification of construction test
 - Mechanical Operation test
 - Electrical Operation test
 - Fifteen (15) seconds of 150% over current test (type test report may be acceptable)
 - Two (2) minutes of 120% over speed test (type test report may be acceptable)
 - Steady state voltage regulation test (type test report may be acceptable)
 - Transient voltage dip test (type test report may be acceptable)
 - Temperature rise test (type test report may be acceptable)
 - Noise tests (type test report may be acceptable)
 - Vibration test
 - Protection device test

- Deviation factor of wave form (type test report may be acceptable)
- Excitation equipment tests
- Measurement for calculation characteristics
- Insulation resistance test
- Power frequency withstand voltage test
- Accessories and spare parts tests.
- B. Diesel Engine with all Accessories
 - Verification of construction test
 - Mechanical operation test
 - Electrical Operation test
 - Starting Characteristics tests
 - Ten (10) minutes of no-load operations test
 - Load Operation tests (type test report may be acceptable)
 - Thirty (30) minutes of 25% load test
 - Thirty (30) minutes of 50% load test
 - Thirty (30) minutes of 75% load test
 - Two (2) hours of full load test
 - Ten (10) minutes of 125% load test
 - One (1) minute of 110% overspeed test
 - Governor performance test (type test report may be acceptable)
 - Temperature rise tests (type test report may be acceptable)
 - Noise test (type test report may be acceptable)
 - Vibration test
 - Protection device tests
 - Auxiliary equipment tests
 - Accessories and spare parts tests.

C.27

ELECTRICAL TEST

The Contractor shall conduct all preliminary field tests and trial operations (except for the final field inspection), which will be witnessed by CAAP. Ensure that all necessary labor, equipment, and materials are provided for the tests. CAAP's engineers / representative/s must be informed in advance of the dates and times for any tests, trial operations, or inspections. If any deficiencies are found, the contractor is responsible for fixing them and retesting the affected work at their own cost. The testing procedure must comply with established standard practices.

- Examine all devices and equipment for any signs of damage or misalignment caused during shipping or installation.
- Ensure that the bolted bus joints are tightened according to the manufacturer's specifications by using a calibrated torque wrench.
- Conduct mechanical operator and contact alignment tests on breakers and operating mechanisms as per the manufacturer's guidelines.
- Verify the electrical continuity of the current, potential, and control circuits in line with the wiring diagrams.
- Conduct a 500 VDC insulation resistance test on the field-installed control wiring and cables, as well as the factory-

installed control wiring, ensuring that the minimum insulation resistance is 1,000,000 ohms.

- Remove any wedges, ties, or blocks put in place by the manufacturer to protect the equipment during transportation.
- Inspect low-voltage circuit breakers following the manufacturer's instructions.
- Confirm the functionality of power relays and perform the necessary tests and calibrations.
- Verify maximum resistance to ground of grounding systems.
- Conduct functional/operational tests on all equipment.
- Conduct a load test for the Diesel Engine Generator Set (Genset)

The tests shall be conducted as the work progresses and once each electrical system has been fully installed.

All tests must be performed with the presence of a CAAP's technical personnel, and notifications in writing must be given at least three (3) days before the tests.

C.28

AT SITE PERFORMANCE TEST

After installation and prior to the energization of the diesel engine generator set, the contractor shall perform another test to be witnessed by the procuring entity's technical representative and/or engineer. The following assembling performance test shall be taken are as follows;

- Verification of construction tests
- Mechanical Operation tests
- Electrical Operation tests
- One (1) minute of 110% overspeed test
- Noise and vibration tests
- Insulation resistance measuring

C.29

COMMISSIONING TEST

- Activate all installed equipment and make any necessary adjustments to ensure proper operation as directed by the equipment manufacturer.
- Conduct demonstration tests, including operating the systems under various conditions, to demonstrate that they function as intended under the terms of the contract.
- The demonstration/commissioning test must be witnessed by technical representatives from CAAP Central Office and from Mactan Air Navigation Facility.
- Commissioning test shall be carried out for (a) Electrical Equipment, individually and separately installed (b) Standby Generator (c) The entire power system under this specification.

C.30

CLEANING

The contractor must clear away all dirt, debris, waste, and rubbish generated during the construction process. After the project has been completed and accepted, the contractor must also remove all tools, temporary power installations, facilities, scaffolding, and waste materials

C.31

AVAILABILITY OF SPARE PARTS AND TRAINING

The procuring entity requires the contractor to meet the following requirement to ensure continuous service operation of the procured infrastructure/products/services.

- Spare parts must be available for a minimum of five (5) years
- Contractor must present/submit a five (5) year Certificate of Spare Parts Availability from its distributor or OEM.
- A list of spare parts specified in the operation manual or on a separate manual containing its unit cost must be provided to the procuring entity.
- On-site local training must be provided by the contractor to the procuring entity's maintenance personnel during handover stage of the system operation including minor trouble shooting of the system.
- The contractor shall conduct a 5-day (total of 40 hours) Generator System operation and maintenance training session on site for the technical personnel who will be in-charge in the operation and maintenance of the new system.
- Trainees who completed the training session shall receive a Certificate of Completion from the contractor's distributor or OEM provider.
- Three (3) sets of Operation and Maintenance Manual bound on a hardback binder and soft copy (pdf format) shall be provided to the end-user

D. TECHNICAL SPECIFICATIONS

D.1

GENERAL

The new two (2) sets 320kVA Diesel Engine Generator Set (Genset) will automatically provide back-up power to Mactan AFC Building during commercial power outage. Either one (1) of two (2) generators can perform as duty or standby by manual selector switch, ensuring that one of them can start automatically when commercial power failure occurs. The general works involve are supply/delivery/installation of the following items;

- 320kVA Diesel Engine Generator (Prime Rated Power)
- Generator system and associated (a) exhaust piping system (b) Fuel distribution systems (c) water cooled heat exchangers (d) battery start-up systems
- Total noise and vibration control systems
- Automatic/manual starting system
- Power cabling, control, instrumentation, and grounding cables & rods.
- Accessories and related works required to complete the work to meet the specifications.
- Testing/Commissioning

D.2**DIESEL GENERATOR**

The diesel engine generator set to be supplied shall be;

- Open type with complete with accessories
- Diesel Engine driven electric generator with Control Panel
- Direct-coupled to alternator, brushless excitation system
- Cooling Water System
- Lubrication Oil System
- Silencer, flexible exhaust gas pipes with mineral fiber, heat, insulator, support hangers and anti-vibration isolator springs.
- 10A battery charger with battery and cables

D.3**ENGINE DATA**

- 4 cycles, v-type multi cylinder, direct injection controlled with electric governor.
- Rotating Speed: 1800 rev/min.
- Starting: By motor
- Cooling System: Radiator water-cooled
- Charging method: Exhaust turbo charger and Air charge cooling
- Fuel feeder: To be equipped with fuel pump and jet valve for automatic pressure fuel feeding into combustion chamber for pressure ignition.
- Lubrication System: Forced lubrication by gear pump
- Overload endurance: 110% for 30minutes
- Overspeed endurance: 110% for 1 minute
- Noise: Not more than 85dB at 1m from exhaust outlet

D.4**ALTERNATOR DATA**

- Rated Capacity: 320kVA/256kW (Prime Rated Power)
- Type: Brushless Exciter, indoor
- Output Voltage: 220V/127V AC
- Rated Frequency: 60Hz
- Power Factor: 0.8 lagging
- Phase: 3Ø, 4P
- Insulation: Class H or Class F
- Rotating Speed: 1800 rev/min
- Voltage Regulation: Max. \pm 5% underload from no load to 100% rated load.
- Frequency Regulation: Max. \pm 3% underload from no load to 100% rated load
- Class of Rating: Prime Rated Power (PRP).
- Winding Material: 100% copper
- Cooling: Self-cooling
- Ambient Temperature: 45 deg. C
- Starting time: \leq 10-12 secs
- AC waveform Total Harmonic Distortion (THD: Less than 5% total no-load to full linear load and less than 3% for any single harmonic
- Over-speed Strength: 110% of rate speed for one (1) minute under no-load
- Power Frequency Withstand voltage: 100V + 2E (1500V min.)
- Efficiency (%): \geq 92.7%
- Protection Level: IP23

D.5 MOUNTING BASE and ENCLOSURE

- As specified in the Drawing

D.6 ENGINE FUEL SYSTEM

- The engine shall be provided with all necessary equipment, including fuel piping, fittings, valves, filters, strainers and appurtenances. The engine shall be high-speed water-cooled, and shall operate satisfactorily on a commercial grade diesel fuel oil.

D.7 FUEL PUMP and LEVEL CONTROL

- Positive Displacement Gear pump, Size: 1"x 1" Suction and Discharge, rated to deliver 0.25-0.53 LPS (15-321LPM) against 22.47 PSI, Total Dynamic Head at 32 SSU viscosity, the pump is directly coupled to Standard AC Induction Motor, 1/2HP, 3Ø, 230VAC, 1750 RPM, 60Hz.

D.8 ELECTRONIC GENERATOR CONTROL PANEL

The control panel for the electronic generator should have both user-friendly programming options and with advanced monitoring engine and generator capabilities.

D.8.1 Control Panel Main Features

- Programming via the front panel or via computer
- Digital Inputs for signals that provide a contact closure (oil pressure, coolant temp. etc)
- Fuel/Ignition Output
- Starter output
- Three (3) configurable analog inputs (e.g., oil pressure, coolant temperature.)
- Generator Voltage input, 3 ϕ
- Generator Current input, 3 ϕ

D8.2 Control Panel Display

- Generator Voltage
- Generator Current
- Generator Frequency
- Generator Power Output (Kw, var, Kwh)
- Engine oil pressure
- Engine coolant temperature
- Engine Hours
- Engine Status and Alarm
- Other necessary display

D.9

STANDARD

The materials, equipment, and method of installation comprising the complete works shall be in accordance with the latest applicable codes, standard, and guidelines

- PEC – Philippine Electrical Code
- IEEE – Institute of Electrical and Electronics Engineers
- UL – Underwriters' Laboratories
- ANSI – American National Standards Institute
- NEMA – National Electrical Manufacturers Association
- ICAO – International Civil Aviation Organization
- IEC – International Electrotechnical Commission
- NFPA – National Fire Protection Association
- DENR Standard – Department of Environment and National Resources

D.10

GROUNDING SYSTEMS

The grounding works shall be in accordance with the following requirements;

- Grounding works shall comply to applicable standards, Philippine Electrical Code (PEC)-Part 1
- Grounding conductor size shall be in accordance with the applicable standard code.
- Connection/bonding between ground rod to cable and/or cable to cable shall be exothermic.
- Ground rod shall be copper clad steel, UL listed and 15 mm in diameter and 3 meters in length.

Section VII. Drawings

Section VIII. Bill of Quantities

BILL OF MATERIALS / COST ESTIMATE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
A.	REPLACEMENT OF DIESEL ENGINE GENERATOR SET (DEGS) AT MACTAN AFC				
I.	GENERAL REQUIREMENTS				
I.1	Mobilization & Demobilization	1	lot		
I.2	LGU Permits, DENR and other necessary permits required, etc.	1	lot		
				sub-total (I)	

II. SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF TWO (2) UNITS BRAND NEW 320kVA/256kW (PRIME RATED), 3-PHASE, 220V/127V, 60HZ DIESEL GENERATOR SET (OPEN FRAME/TYPE) INCLUDING EXHAUST PIPE/MUFFLER , FUEL LINE SYSTEM AND ACCESSORIES AT MACTAN AIRPORT, MACTAN, CEBU

II.1 EQUIPMENT/MATERIALS

2

set

Diesel Engine Generator:

The diesel engine generator set to be supplied shall be;

- Open type with complete accessories
- Diesel Engine driven electric generator with Control Panel
- Direct-coupled to alternator, brushless excitation system
- Cooling Water System
- Lubrication Oil System
- Silencer, flexible exhaust gas pipes with mineral fiber, heat, insulator, support hangers and anti-vibration isolator springs.
- 10A battery charger with battery and cables

The noise level of the generator shall comply with the Department of Environment and Natural Resources (DENR) requirements.

The exhaust system shall comply with DENR RA 8479 "Clean Air

Diesel Engine:

- 4 cycles, v-type multi cylinder, direct injection controlled with electric governor
- Rotating Speed: 1800 r.p.m.
- Starting: By motor
- Cooling System: Radiator watercooled
- Charging method: Exhaust turbo charger and Air charge cooling
- Fuel feeder: To be equipped with fuel pump and jet valve for automatic pressure fuel feeding into combustion chamber for pressure ignition
- Lubrication System: Forced lubrication by gear pump
- Overload endurance: 110% for 30minutes
- Overspeed endurance: 110% for 1 minute
- Overspeed endurance: 110% for 1 minute
- Noise: Not morethan 85dB at 1m from exhaust outlet

Generator:

- Rated Capacity: 320kVA/256kW (Prime rated)
- Type: Brushless Exciter, indoor
- Output Voltage: 220V/127V AC
- Rated Frequency: 60Hz
- Power Factor: 0.8 lagging
- Phase: 3Ø, 4P
- Insulation: Class H or Class F
- Rotating Speed: 1800 r.p.m.
- Voltage Regulation: Max. \pm 5% underload from no load to 100% rated load.

- Frequency Regulation: Max. $\pm 3\%$ underload from no load to 100% rated load.
- Class of Rating: Prime Rated Power (PRP).
- Winding Material: 100% copper
- Cooling: Self-cooling
- Ambient Temperature: 45 deg. C
- Starting time: $\leq 10-12$ secs
- AC waveform Total Harmonic Distortion (THD)
 - : Less than 5% total no-load to full linear load and less than 3% for any single harmonic
- Over-speed Strength: 110% of rate speed for one (1) minute under no-load
- Power Frequency Withstand voltage: 100V + 2E (1500V min.)
- Efficiency (%): $\geq 92.7\%$
- Protection Level: IP23

Control Panel:

- Auto Mains (Utility) Failure Control Module
- Manual and Automatic start/stop control of the generator.
- Display warnings, shutdown and engine status info on the back-lit LCD screen, illuminated LEDs, remote PC. Monitors the mains (utility) supply. Includes USB, RS232 and RS485 port for system expansion.
- Compatible with electronic and non-electronic engines and offer flexible inputs, outputs and engine protections to meet industry requirements.
- Includes enhanced event and performance monitoring, remote communications to reduce engine wear. It can either be programmed using PC software.
- Type: Self-standing cubicle type/ Generator mounted with vibration proof pads.
- Equipment Included:
 - | Molded Case Circuit Breakers (MCCB) equipped with LSIG trip unit function.
 - | AC ammeter & AC voltmeter
 - | Frequency meter & DC voltmeter
 - | Running time meter (hour meter: digital)
 - | Automatic Voltage Regulator
 - | Over-current relay, voltage relay, over-voltage relay
 - | Instrument transformers
 - | Tachometer
 - | Lubrication oil temperature and pressure gauge
 - | Control Switch (Run/Stop)
 - | Emergency Stop push button Switch
 - | Battery and Charger
 - | Others, if required.

Exhaust Pipe/Mufflers:

- Exhaust Pipe/Mufflers must be with mineral fiber insulation
- Support hangers
- Anti-vibration isolator springs.
- The exhaust system shall comply with DENR RA 8479 "Clean Air Act".

Fuel Line System and Diesel Fuel 500 liters (for testing)

- To be connected to the existing day tank fuel line system.

labor/Installation sub-total (II)	

III. DESIGN/FABRICATION, SUPPLY, DELIVERY AND INSTALLATION OF GENERATOR SETS AUTOMATIC TRANSFER SWITCH (GEN-1/GEN-2), MCCB's PROTECTION, POWER CABLE, GROUNDING AND ACCESSORIES

III.1

EQUIPMENT/MATERIALS

AUTOMATIC TRANSFER SWITCH (ATS)

1

lot

■ System of Automatic Operation;

- | During commercial power being supplied, the two (2) generators are on stand-by.
- | Either one (1) of the two (2) generators can perform as duty or standby which can be changed by manual selector switch, so that one of them can start when commercial power occurs.
- | When main power fails, the duty generator will start automatically.
- | When Commercial power is recovered, AC power supply will change over to commercial after confirming time delay. Then the engine generator will automatically stop after cooling preset time delay.
- | If the operating generator fails in any of the fault conditions listed below, such generator will be automatically shut down;
 - a.) Low oil pressure
 - b.) High water temperature
 - c.) Over speed
 - d.) Start failure
 - e.) Generator voltage abnormal
- | If some troubles happen on the priority generator, secondary generator will be started automatically.
- | As these three (3) power sources, namely commercial power, priority generator and secondary generator, are not synchronized, electrical and mechanical interlock are furnished in the low-voltage switchgear.
- | Manual Operation: Manual start-stop and load on-off of the engine generator can be carried out of switch operation.

■ Equipment Included:

- | Self-standing cubicle type, powdercoated wrinkled gray finished c/w grounding.
- | Automatic Transfer Switches 1000A r.m.s , 3PDT, 600V, 60Hz.
- | Controllers
- | Selector Switches
- | Indicating lights
- | Protective Relays (Short Circuit, Overcurrent, Over/Under Voltage)
- | Two (2) sets Molded Case Circuit Breakers (MCCB) 600V, 1000AT/1000AF, 3P, 25kAIC, Industrial Type equipped with LSIG trip unit function.
- | MCB/FUSE
- | Timer
- | Signal/command/feedback cables
- | others, if required.

ELECTRICAL WIRES & ACCESSORIES

- | | | | |
|--|-----|-----|--|
| 175mm sq. THHN/THWN-2, 90D, 1C Cu. Conductor, Stranded powercable | 300 | m | |
| Long barrel, single hole terminal lugs for 175mm ² wire | 18 | pc. | |

labor/Installation
sub-total (III)

IV. DESIGN/FABRICATION, SUPPLY, DELIVERY AND INSTALLATION OF LOW VOLTAGE SWITCHGEAR INCLUDING AUTOMATIC TRANSFER SWITCH (NORMAL/GENERATOR), MCCB's PROTECTION, POWER CABLE, ACCESSORIES AND CONNECTION TO THE EXISTING LOW VOLTAGE PANELS.

IV.1

EQUIPMENT/MATERIALS

LOW VOLTAGE SWITCHGEAR/CONTROL CUBICLE

■ Self-standing cubicle type, powdercoated wrinkled gray finished c/w grounding.	1	set	
■ Molded Case Circuit Breaker (MCCB) 800AT/800AF, 600V, 3P, 25kAIC, Industrial Type	1	set	
■ Molded Case Circuit Breaker (MCCB) 225AT/225AF, 600V, 3P, 25kAIC, Industrial Type	1	set	
■ 175mm sq. THHN/THWN-2, 90D, 1C Cu. Conductor, Stranded power cable (LVSG/ATS Panel)	200	m	
■ Long barrel, single hole terminal lugs for 175mm ² wire	72	pc.	
■ Transient Voltage Surge Suppressor (TVSS) 10kA (8/20μs)	1	set	
■ Connection of Generator Control Panel and/or MCCB parameters to the existing Monitoring Panel	1	lot	

AUTOMATIC TRANSFER SWITCH (ATS)

1 lot

■ **System of Automatic Operation;**

- | During commercial power being supplied, the two (2) generators are on stand-by.
- | Either one (1) of the two (2) generators can perform as duty or standby which can be changed by manual selector switch, so that one of them can start when commercial power occurs.
- | When main power fails, the duty generator will start automatically.
- | When Commercial power is recovered, AC power supply will change over to commercial after confirming time delay. Then the engine generator will automatically stop after cooling preset time delay.
- | If the operating generator fails in any of the fault conditions listed below, such generator will be automatically shut down;
 - a.) Low oil pressure
 - b.) High water temperature
 - c.) Over speed
 - d.) Start failure
 - e.) Generator voltage abnormal
- | If some troubles happen on the priority generator, secondary generator will be started automatically.
- | As these three (3) power sources, namely commercial power, generator and secondary generator, are not synchronized, electrical and mechanical interlock are furnished in the low-voltage switchgear.
- | Manual Operation: Manual start-stop and load on-off of the engine generator can be carried out of switch operation.

■ **Equipment Included:**

- | Self-standing cubicle type, powdercoated wrinkled gray finished c/w grounding.
- | Automatic Transfer Switches 1000A r.m.s , 3PDT, 600V, 60Hz.
- | Controllers
- | Selector Switches
- | Indicating lights

- | Over/Under Voltage
- | MCCB/MCB/FUSE
- | Timer
- | Signal/command/feedback cables
- | 175mm sq. THHN/THWN-2, Cu. power cables
- | others, if required.

**labor/Installation
sub-total (IV)**

V. SITE WORKS

V.1 EQUIPMENT/MATERIALS

- Supply of labor, tools, supervision, equipment and materials needed for the following: Removal of the existing generator sets and its fixed connected parts, including exhaust muffler and pipe and hangers, power cables and harness, and packaging/crating of the same for safe keeping. Removal of Control Cubicle Panel prior to the installation of new two (2) generator sets and new ATS and Control Cubicle panels at powerhouse. Removal of existing LV Distribution Panels prior to the installation of new LVSG/ATS Panel at AFC building.
- Replacement of electrical feeder line from AFC Power Plant to AFC Building/Tower with 175mm sq. cable (shown in the drawing)
- Replacement of Generator/Equipment Grounding system.
 - 14mm dia. X 1.5m copper clad ground rod with clamp
 - 100mm² insulated copper wire
 - 60mm² insulated copper wire
 - 14mm² insulated copper wire
 - 5.5mm² insulated copper wire
 - others, if required

1

lot

1000

m

2

set

35

m

15

m

30

m

30

m

1

lot

**labor/Installation
sub-total (V)**

VI. TRAINING AND FAT

- VI.1 On-Site Facility Training (10 persons) (5 days)
- VI.2 Factory Acceptance Test (3 persons) (5 days)

1

lot

1

lot

**labor/Installation
sub-total (VI)**

VII. MISCELLANEOUS

- VII.1 Tools and Spare Parts

1

lot

**labor/Installation
sub-total (VII)**

Total Direct Cost

- Overhead (7 -11% EDC)
- Contingencies (0.5 -3% of EDC)
- Miscellaneous (0.5 -1% EDC)
- Contractor's Profit (8% EDC)
- VAT/Contractor's Tax (5% of DC, OCM and Profit)

Total Indirect Cost

Total Project Cost

BILL OF QUANTITIES

Item No.	Scope of Work	Total Cost
I.	General Requirements (Mobilization/ Demobilization, LGU Permits, DENR and other necessary permits required, etc.)	
II.	Supply, Delivery, Installation, Testing and Commissioning of two (2) Units Brand New 320kVA/256kw (Prime Rated), 3-Phase, 220V/127V, 60hz Diesel Generator Set (Open Frame/Type) Including Exhaust Pipe/Muffler, Fuel Line System and Accessories at Mactan International Airport in Mactan, Cebu	
III.	Design/Fabrication, Supply, Delivery and Installation of Generator Sets Automatic Transfer Switch (Gen-1/Gen-2), MCCB's Protection, Power Cable, Grounding and Accessories	
IV.	Design/Fabrication, Supply, Delivery and Installation of Low Voltage Switchgear including Automatic Transfer Switch (Normal/Generator), MCCB's protection, Power Cable, Accessories and Connection to the Existing Low Voltage Panels.	
V.	Site Works	
VI.	Training and FAT	
VII.	Miscellaneous	
Total Direct Cost		
Total Indirect Cost		
Total Project Cost		

² Fill-out shaded area

Section IX. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class “A” Documents

Legal Documents

- ☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);

Technical Documents

- ☐ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid.; and
- ☐ (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules.; and
- ☐ (d) Special PCAB License in case of Joint Ventures, and registration for the type and cost of the contract to be bid; and
- ☐ (e) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission; or original copy of Notarized Bid Securing Declaration and
- ☐ (f) Project Requirements, which shall include the following:
 - ☐ 1. Organizational chart for the contract to be bid
 - ☐ 2. List of contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
 - ☐ 3. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**
- ☐ (g) Original duly signed Omnibus Sworn Statement (OSS) ; **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder; **and** with the following attachments
 - 1. Certification, under oath, attesting that they have no pending case(s) against the Government, in addition to the eligibility requirements as prescribe under 2016 Revised Implementing Rules and Regulation (R-IRR) of RA 9184.
 - 2. Legal Clearance to be issued by the CAAP Enforcement and Legal Service with respect to the non-pending cases of the prospective bidders against this Authority.

Financial Documents

- ☐ (h) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

- ☐ (i) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence;
or
duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

I. FINANCIAL COMPONENT ENVELOPE

- ☐ (j) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

- ☐ (k) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- ☐ (l) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals (refer to Annex 1-3) used in coming up with the Bid; **and**
- ☐ (m) Cash Flow by Quarter and Payment Schedule. (Annex 4)

NOTE: Please refer to the Annexes provided, which include CAAP forms for items (l) and (m).

(ATTACHED COMPANY LETTER-HEAD/ LOGO)

SUMMARY FOR UNIT PRICES OF MATERIAL

Project:

Location : _____

[illegible]

Submitted by:

Signature: _____

Printed Name: _____

Position: _____

Name of Company: _____

Date: _____

(ATTACHED COMPANY LETTER HEAD/ LOGO)

SUMMARY FOR UNIT PRICES OF LABOR*Project:* _____*Location :* _____

DESCRIPTION	UNIT PRICE	UNIT

Submitted by:

Signature: _____*Printed Name:* _____*Position:* _____*Name of Company:* _____*Date:* _____

(ATTACHED COMPANY LETTER-HEAD/ LOGO)

SUMMARY FOR UNIT PRICES OF EQUIPMENT

Project:

Location :

[illegible]

Submitted by:

Signature: _____

Printed Name: _____

Position: _____

Name of Company: _____

Date: _____

{ATTACHED COMPANY LETTERHEAD/LOGO}

Name of Project: _____

Location of Project: _____

CASH FLOW BY QUARTER AND PAYMENT SCHEDULE

PARTICULAR	%W	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ACCOMPLISHMENT					
CASH FLOW					
CUMMULATIVE ACCOMPLISHMENT					
CUMMULATIVE CASH FLOW					

Submitted by:

Name of the representative of bidder

Position

Name of the Company

Date

