Annex A

SUPPLY REQUIREMENTS and SPECIFICATIONS

5.1.   GENERAL DESCRIPTION

Project Title: Development of Renewable Energy Management Bureau Data Warehouse and Management Information System

Description of Scope: Application Development Services for the REMB Management Information System (MIS) and REMB Web Application Portal which will entail the following:

Application development, enhancement, integrations, and implementation of the agreed applications covered by the engagement.

Coordination with UNDP and REMB/DOE teams to ensure high resource utilization and productivity of the team; and

Performance of any other function or task related to the foregoing services.

Term: The Services will be effective for a period of 6 months (December 1, 2020 to May 31, 2021)

Duties and Responsibilities: The "Vendor" will provide the following services pertaining to REMB MIS and REMB Website throughout the duration of the Scope of Services

- Application UI/UX Design and Application Development

- Application Testing (Functional Testing, Load Testing, Vulnerability Assessment and Penetration Testing) and Bugs Fixing (if needed)

- User Acceptance Testing Support

- Data Migration

- Knowledge Transfer

- Deployment

- Hypercare Support / Warranty Period

5.2. TECHNICAL SPECIFICATIONS

All items offered must be described in the column reserved for such purpose in the below table, responding to each of the line specifications described for each item. For each specification line of each item, bidders must -in addition to their description of the product/service offered- highlight clearly the wording « Agreed, will comply » must be stated.

TECHNICAL SPECIFICATIONS
1. Software requirements

Ownership, Intellectual Property, Licenses, Source Codes and SDKs	**REQ 1.** Intellectual Property exclusively belongs to UNDP and the DOE/REMB: UNDP and the DOE/REMB are contracting development services. Correspondingly, the Vendor shall provide all Source Code and assign all intellectual rights to the UNDP and DOE/REMB and may not reuse it for any other purpose. The Vendor warrants and represents that the DOE/REMB, as the End user, will be granted the same rights granted to UNDP.
	REQ 2. UNDP and DOE/REMB shall be the exclusive owner of the Work, including all output, new software/application, systems, programs, source codes, deliverables, documentation, and proceeds which may be created out of or in connection with the Vendor's performance of services and delivery of work covered.
	REQ 3. There shall be no hidden costs: The Vendor shall acquire and maintain at their own cost software products and licenses for the test and development environments necessary to develop, release and maintain The Software in development and/or in maintenance. Any software development kit or component needed to guarantee the full operation in production of the solution as requested must be included in the offer, and no extra costs can be accepted thereafter in order to comply with the requirements.
	REQ 4. There shall be no time or usage limitation or other restrictions on third party products or libraries the Vendor chooses to employ. All third-party products should be from the public domain or have an MIT, BSD or Apache license. Other permissive open source licenses will be accepted but must be pre-approved by UNDP and the DOE/REMB to avoid any disagreement over interpretation.
	There shall be no vendor lock: Provision of licenses, SDKs and sources codes must guarantee the End User to be able to ensure independent maintenance and updating/modification of the Software in the future. This includes the right of the End User to have a commercial third party (i.e. not only DOE/REMB staff) modify the software free from license or usage constraints from the Vendor or any product or library the Vendor has chosen to employ.

TECHNICAL SPECIFICATIONS
Copyright infringement	Vendor has or shall secure permission from the rightful owner to use any third-party owned images, design elements, applications and licenses, such as Software, Hardware and Infrastructure, provided or procured and used by the Vendor for the performance of the Services or the creation of the Application.
Methodological Requirements	**Release Management** **REQ 5.** <u>Continuous Integration and Version Control</u>: The building of the applications from source code and other artefacts shall be fully automated, and user friendly. The source code will be made available throughout the project using a git code repository. **REQ 6.** The continuous integration and version control tools must be made securely accessible to UNDP and DOE/REMB designated staff. **REQ 7.** Each commit to the code repository will include a relevant description of what the commit covers as issues or features. **REQ 8.** If there are problems with the deployment of a release and the End User/UNDP are not able to get a release installed, the Vendor shall assist in getting the release deployed to the satisfaction of End User/UNDP. **REQ 9.** Unit, integration, load/stress, and security tests (based on OWASP Application Security Verification Standard 4.0) must be provided for all requested features. A white box testing approach will be used. Additional random (monkey) testing could be added, as necessary. **Issue Tracking** **REQ 10.** The Vendor must maintain an issue tracking system where the Vendor and UNDP along with DOE/REMB together can follow up on issues related to this project. **REQ 11.** All tickets, regardless of their status, must be accessible by UNDP and DOE/REMB. **REQ 12.** The issue tracking system and its content should be transferred to a DOE/REMB server before the end of the warranty period. **Documentation**

TECHNICAL SPECIFICATIONS

	REQ 13. A developer manual should:
	a. List all technologies, toolkits and libraries used in the software.
	b. Describe the architecture of the system in details.
	REQ 14. The developer manual must be provided in the form of a wiki platform. It is setup at the beginning of the project and its content must reflect the delivery progress of the software.
	REQ 15. The developer wiki should be editable by UNDP or DOE/REMB staff throughout the project for the purpose of asking questions to the vendor or adding their own content to the developer manual.
	REQ 16. The developer wiki platform and its content should be transferred to a DOE/REMB server before the end of the warranty period.
	Access Control
	REQ 17. Application access control shall be established, documented, and reviewed based on business and information security requirements.
	REQ 18. The application shall have user registration and de-registration process implemented to enable assignment of access rights.
	Access to applications shall be controlled by a secure log-on procedure.
Technological Requirements	*The versions of the software (and any other included in the solution) requested below must be the latest stable as of the signing of the contract.*
	REQ 19. The code repository and issue tracker must be based on gitea/github.
	REQ 20. There should be an open-source automation to be used for continuous integration (i.e. Jenkins, Atlassian Bamboo, etc.)
	REQ 21. SonarQube for automatic code reviews. SonarQube will have to be configured to check against OWASP vulnerabilities.
	REQ 22. The database must be based on common DB stacks such as MySQL, Oracle, and MongoDB

TECHNICAL SPECIFICATIONS
REQ 23. The backend must be based on flexible stack technologies/server-side languages such as Python, Ruby, Java, PHP and .Net
REQ 24. The web frontend should consist of fundamental frontend technology stacks (i.e. HTML, CSS, JavaScript, and its frameworks)
REQ 25. The CMS solution platform should come pre-built and can be customized to the needs of the client (SaaS Platform or Cloud CMS)
REQ 26. Use an extensible logging framework like SLF4J with Logback, or Apache Log4j2, to ensure that all log entries are consistent.
REQ 27. Because some frameworks have security flaws, build in additional controls or security protections as needed
REQ 28. The system must be cross-platform optimized for mobile phones/tablets
REQ 29. Deployment must be based on Docker and/or Kubernetes
REQ 30. The Vendor shall Implement Rollback or Catch Up Plan when necessary
REQ 31. The Vendor shall select the most secure and stable versions of software components that is put together into the system. The Vendor shall conduct assessment and avoid software components having known vulnerabilities and flaws, including those products that are about to be obsolete and will have issues regarding compatibility. The Vendor shall replace software components right after discovery of its flaws and there is no remediation available.
REQ 32. Integration of processes and other external software systems shall be seamless. Transfer of processing between computer programs shall not be delayed. Typical handshakes shall employ database to database connectivity and/or event-driven triggers (e.g. REMB MIS obtaining data from EVOSS).
REQ 33. The system shall be interface ready
REQ 34. Programmatic interfaces shall be designed with Microservices principles in mind, particularly encapsulation, so that external systems need only understand the interface specification to communicate with the registry system.

TECHNICAL SPECIFICATIONS	
	Common components can be shared and reused so as adding, removing, and enhancing a function or feature can be easily done without any major recoding work. The scalability scheme shall be completely described in the design document prior to implementation, the planned architecture should be submitted to UNDP, REMB and DREAMS for approval.
Software, Hardware, and Infrastructure	**REQ 35.** Vendor shall use industry standard anti-virus software and devices to screen all Software, Hardware, Infrastructure and/or Work prior to delivery to DOE/REMB to prevent any virus, worms or other computer system or destroying, erasing or otherwise harm any data, software, hardware or infrastructure pertaining to DOE/REMB **REQ 36.** Vendor shall ensure that all Software, Hardware and Infrastructure used in the Services, including Firewalls, router, network switches, operating systems, shall log information to their respective system log facility or a centralized syslog service in order to enable security reviews and analysis Web server error responses shall avoid allowing server details, diagnostic data and/or debugging information to be retrieved by the public.
GUI	**REQ 37.** The system graphical user interface must support access via the internet All graphical user interfaces must be accessible using the latest version of Google Chrome, Mozilla Firefox, Microsoft Edge, Apple Safari, Microsoft Internet Explorer, and/or any major browser
Data Protection	**REQ 38.** Software and data vulnerability controls shall be in place to prevent all methods of exploitation, destruction, compromising access and data exposure. The system shall use TLS/SSL technology to encrypt communications between the user and the web application server. Web application shall use HTTPS. **REQ 39.** Avoid using an inadequate key, or storing the key along with the encrypted data Data shall be fully encrypted to prevent unauthorized access. Strongly encrypt critical data at storage. A hash plus salt shall be implemented, or any stronger encryption mechanism.

TECHNICAL SPECIFICATIONS

2. Staffing requirements

	By delivered, it is meant that the requirements above are developed, tested and accepted by UNDP as per conditions described in this ITB. **REQ 40.** Unless otherwise requested, all staff working on this project must have at least five years of experience in the requested area and technologies **REQ 41.** A minimum of one backend developer must be part of the team until the software requirements are delivered. **REQ 42.** A minimum of one web frontend developer must be part of the team until the software requirements are delivered. **REQ 43.** A minimum of one DevOps must be part of the team until the software requirements are delivered. **REQ 44.** A minimum of one test/quality engineer must be part of the team until the software requirements are delivered. **REQ 45.** CVs must be provided for each resource mentioned in the requirements at bidding times. *The bidder may add any other profile or necessary resource they think is necessary to guarantee successful delivery within the requested timelines.* *UNDP may choose to interview some of the proposed profiles during the evaluation period, especially if there is any deviation regarding the criteria stated above, to ensure only senior (highly qualified) personnel is accepted.*

3. Schedule and operational requirements

	The software's minimum requirements will have to be developed in four iterations starting from the date of contract signing. Each iteration must include unit and integration, other required tests demonstrating the delivered requirements and data migration.

TECHNICAL SPECIFICATIONS

	REQ 46. The first iteration will cover the following:
	• System registration and logging in
	• User, Group, Role and Account Management
	• Security Features and Access Rights Definition
	• General Functionalities
	o System Menu and Navigation
	o Error and Notifications Handling
	o Screen Design and Screen Objects Standards
	• Dashboard and Widgets
	• Renewable Energy Module
	• File Management
	• RE Approval Workflows and Reports
	REQ 47. The second iteration will cover the following:
	• RE Plants Module
	• Interactive Geographical Information System (Maps Module)
	• RE Plants Approval Workflows and Reports
	REQ 48. The third iteration will cover the following:
	• RPS Module
	• Calendar Module
	• Build Form Module and Approval Workflows

TECHNICAL SPECIFICATIONS
- Complete System Configurations   - Audit Trail Procedures   - Other Features such as Feedback and Complaints Form, Quick Links to Policy Mechanisms, and other small changes   **REQ 49.** The fourth iteration will cover the following: - REMB Website   - Content Management System   **During the initial implementation period, the bidder's office will host two representatives who will participate in the project (one from UNDP and one from the DOE/REMB).**

4.   Technical Support
REQ 50. The Vendor will support/assist the installation, conduct testing, and ensure functioning of the items provided to REMB/DOE Offices during approximately up to *date*. The Vendor will among others, but not exclusively, assist preparations, installations, and readiness of all provided software modules for the pilots, go live and hyper care period. **REQ 51.** At least the same team must be ready for the provision of expedited and enhanced second level support to the DOE/REMB in relation to the items provided as per Contract, up to *date*. 1. This refers essentially to support fixing issues with software and advising on infrastructure issues, including data capture, storage, communication amongst units and reporting, help on data consolidation. 2. Technical Support is requested to be provided expeditiously, at following target customer status update time: Critical: Every 60 minutes or as agreed upon with the End User/s   Target Resolution Time: 4 hours or less

TECHNICAL SPECIFICATIONS
- High: Every 2 hours or as agreed upon with the End User/s Target Resolution Time: 8 hours or less   - Medium: Upon Request Target Resolution Time: 24 hours or less   - Low: Upon Request Target Resolution Time: 3 business days   3. If required on specific dates, the technical team should be fully available to travel to locations in Luzon Field Office, Visayas Field Office and/or Mindanao Field Office, and assist/resolve problem as required (travel and accommodation for this item should not to be included in the offer as it will be conducted on a need basis and paid for accordingly). 4. The system shall have a monthly availability of 98%, measured on a 24x7 basis. System availability requirements do not vary by time of day. 5. The system shall have a maximum tolerable downtime of 1 hour, during which time the system's operation shall be switched over to the back-up site 6. Critical components of the software shall have the capability to monitor all available processors and transfer processing to the next available processor in case of processing errors or computer hardware failure. The transfer process shall be seamless and shall have minimal or no impact to other running processes or user transactions **The software that will be developed by the Vendor shall be running and available for functional processing 98% of the time**
5. Training and know-how transfer
Training and Awareness

REQ 52. The vendor shall provide training for all DOE/REMB MIS and CMS users

TECHNICAL SPECIFICATIONS
REQ 53.   The vendor shall provide training for DOE/REMB MIS and CMS administrators   The vendor shall provide training materials for all training.

6.   Project Management and Implementation Requirements

REQ 54.   The Vendor must have a collaborative platform such as Dropbox/Google Drive that store and secure files in central location.

REQ 55.   A short daily meeting (through conference calls as necessary) will be made to follow up on last day's activities of each team member and the day's activities. At the very minimum, those meetings should include all the successful bidder's selected experts, as well as a UNDP representative.

REQ 56.   Written communication on the project's progress must be made on a weekly basis, or more frequently if requested by UNDP. Communication should include relevant and updated excerpts from the project's risk management plan.

REQ 57.   The deliverables will be subject to acceptance testing. The tests are made jointly by UNDP, DOE/REMB and the Vendor, where UNDP and DOE/REMB provide guidance on the general test case and acceptance criteria, and the Vendor details the case with test data and detailed steps. UNDP and the DOE/REMB are free to test with other data and in other ways than planned.

There are three acceptance test outcomes:

- *Accepted*. The content is accepted according to the test plan. The project's phase starts transitioning to the post-implementation support phase without reservation. The Vendor will fix any defect discovered during the support period in accordance with the Service Level requirements defined in the Technical Assistance section above.

- *Tentatively accepted*. The content is not accepted according to the test plan, but the shortcomings are not so severe, and a list of issues is produced. Transition to the support phase could start and the Service Level requirements defined in the Technical Assistance section above apply. The Vendor is still liable to address defects raised by UNDP or the DOE/REMB.

TECHNICAL SPECIFICATIONS
Rejected. The content is not accepted, and the shortcomings are so severe that an additional iteration must be put in place to fix the outstanding issues.   If any deliverable is deemed non-compliant (rejected) regarding any requirement, the whole system may be deemed non-compliant. In case of disagreement over the nature of an issue, such as whether it is a compliance issue, bug or enhancement, UNDP is the ultimate decision maker on the nature of the issue. Likewise, UNDP is the ultimate decision maker on whether a given deliverable is compliant or not.
7. Deliverable Acceptance Process
Each deliverable will be subject to acceptance of DREAMS and UNDP. The acceptability of any Deliverable will be based on whether the Deliverable meets the Acceptance Criteria mutually agreed upon by the Parties and defined pursuant to an applicable Project Plan or otherwise pursuant to the Agreement.
8. Compliance
The bidder must agree in writing to all requirements **with no deviation** in their bid. Improvement suggestions are welcome if they do not threaten delivery timelines, but may not constitute a selection criterion, and are subject to agreement of UNDP.
9. Monitoring, Audit and Accountability
REQ 58. The system shall incorporate non-repudiation mechanisms to ensure data changes are undeniably linked to user accounts **REQ 59.** When a user or system process creates or updates any data value, the system shall record the user ID, the data item changed, the previous value and the timestamp

TECHNICAL SPECIFICATIONS

	REQ 60. The system must have logs for traceability of system events
	REQ 61. The system must have an audit trail that records all user actions

5.3. RATING SHEET FOR EVALUATING SUPPLIER CREDENTIALS AND TRACK RECORD

a) Evaluation for the Technical Criteria

UNDP will evaluate the Technical Proposal on a scale of zero (0) to one hundred (100) points, according to the following formula:

Criteria	Maximum Points
Total understanding of the UNDP's requirements by capturing all the MUST features in the proposal	70 points
Experience in system implementation in same industry as principal Supplier/ local partner for at least 5 years	10 points
At least 7 successful Management Information System implementation in the Philippines/ region	10 points
Average number of weeks or months to go "live" is aligned with project timeline	10 points
Total	100 points

The Technical Proposal shall be weighted as seventy percent (70%) of the Final Score.

b) Evaluation for the Financial Proposal

UNDP will evaluate the Financial Proposal on a scale of zero (0) to one hundred (100) points. The Financial Proposal shall be weighted as thirty percent (30%) of the Final Score.

Criteria	Maximum Points
Lower than Budget Proposal	100 points
Higher than Budget Proposal	80 points
No Rate Propose	0
Total	100 points

5.4. PROOF OF CONCEPT

The Vendor must fill up the attached Architecture Review Board deck as part of the rating *(see attached Architecture Review Board template).*