

6 June 2022

MINUTES OF THE PRE-PROPOSAL CONFERENCE and Bid Bulletin No. 1

Request for Proposal (RFP-047-PHL-2022): Procurement of IT Staff Augmentation Services for the establishment of REMB Data Warehouse and Management Information System (RIS), and Provision of Cloud Server Subscription Plan

Location: Zoom Virtual MeetingDate and Time:27 May 2022, 1:00pm, Manila TimeModerator: Kristel Aberilla, Procurement Associate, UNDP

Participants from UNDP:

Ricardo Torres, Project Manager, DREAMS Honey Mae Samson, Technical Coordinator, DREAMS Centilytics Team (UNDP Contractor)- Dhruv, Nidhin Nair, Bhaskar Ghosh

Participant Bidders:

Micro-D International Inc. Apper Digital Inc. Lightweight Solutions Ecloudvalley Technology (Philippines) Inc. Lanexus Corporation Exist Software Labs Inc Datamatics Global Services Ltd Fundacja Instinctools

The Pre-bid conference commenced at 1:00 PM with UNDP welcoming the participants. UNDP Project Team gave a project background on the institutional arrangements and system overview (see Annex 1 for presentation).

UNDP procurement explained that this is a re-tender of previous processes, which had failed because the financial proposals were too high and well beyond the project's cost estimates for the required work and outputs. The Terms of Reference have been refined for this new process, to emphasize work that has already been done and available resources, versus what is required from the winning bidder, and the expected level of effort.

The more pertinent sections of the Request for Proposal (RFP) were discussed, with emphasis on the Instructions to Bidders, Bid Data Sheet, Selection Criteria, Evaluation Criteria, Terms of Reference, and Bidding Forms.

Procurement also stressed that the financial proposal (Forms F and G) **must be encrypted with** a **PASSWORD** and clearly labelled. The password for Financial Proposal <u>must not</u> be provided to UNDP until requested by UNDP. In the e-tendering system, where prompted to enter the **Bid Price, bidders MUST indicate "1" (one) as the price offer.**

No	Questions raised by bidders	Clarifications from UNDP		
No 1	Questions raised by bidders Title of procurement is IT staff augmentation services, but the Terms of Reference mentions technical specifications and requirements. Please clarify.	Clarifications from UNDP While the work requires the services of qualified professionals, the Terms of Reference (ToR) details specific outputs required for the data warehouse and management information system, as well as the cloud server subscription plan. Payments will be linked to acceptance of deliverables, and not level of effort (hours/days) provided by proposed staff. The Contractor will develop, design, integrate, test, and implement the Renewable Energy Management Bureau (REMB) Data Warehouse and Management Information System that will consolidate all the existing Renewable Energy information available in different data warehouses into a centralized database which will be made available through the internet. The system will aggregate the data from different energy sectors and present them in a logical format that the REMB management can then use to aid them in the decision-making process. The Contractor shall also be responsible for providing a cloud-based server, and proposed staff will support and		
		execute deployment to the cloud and support workloads on the cloud, in addition to cloud infrastructure itself. Kindly refer to the Terms of References and Annexes A to E for the complete outputs expected.		
2	The resources to be applied are to be managed by the Client; some delays may not be attributable to the Firm. Why will the Firm be penalized for these delays?	Liquidated damages will be imposed only if the delays in outputs as indicated in the TOR are attributed to the Firm. The Firm is expected to immediately report to UNDP any issues in implementation, including possible delay, so that the proper course of action can be agreed upon, and accountabilities are clarified.		

The floor was then opened for questions from interested bidders.



3	Subscription is based on usage. Please provide a range for the usage of the subscription	User requirement: The maximum concurrent users (CCU) of the application is not more than 500. Data requirement: The system will employ "hybrid" deployments. Considering the critical information to be processed and stored, the primary location of the data would be on the on-premises private cloud server and use a third-party cloud provider to host less-critical resources, such as test and development workloads.
4	Is the firm expected to be based in the Philippines for the implementation?	The Bidder or its partner (as part of a joint venture, consortium, or association) MUST have a local office and presence in the Philippines for ease of coordination with the project team and government partner. This will be included as one of the eligibility requirements (pass or fail).
5	Is there a budget cap for the proposals?	UNDP cannot disclose the available budget for the project. Bidders are encouraged to put in their best price offer, while ensuring that the technical proposal is compliant with and responsive to all the requirements in the solicitation document and Terms of Reference. Evaluation employs a combined scoring method of 70% technical score and 30% financial score. Expected number of personnel, level of effort, and technical outputs have been discussed in the TOR. While technical proposals must be robust and responsive to the TOR, and compliant with the requirements stated, the financial offer should also present value for money. Proposal must therefore strike a balance between a responsive technical offer, and sound financial proposal.

UNDP reminded the participants that further clarifications may be sent to procurement.ph@undp.org. Bidders were reminded to register on the eTendering site and accept the invite to the eTender event to be able to access all solicitation documents and receive notifications on any and all Minutes of the Conference, bid bulletins and amendments to the solicitation document, and responses to bidders' clarifications.

Without any further inquiries from bidders, the meeting adjourned.

Bid Bulletin No. 1

No	Clarifications from UNDP				
1	Amendment on the Technological Requirements, Staffing Requirements and Technical Support (highlighted in	Please note the amendments on pages 12, 15, and 16 of the file "REVISED Annexes to the Terms of Reference."			
	yellow in Annex D: Revised Technical	Technological Requirements			
	Specifications)	The database must be based on MySQL stacks. The backend must be based on NodeJS stack technologies/server-side languages. The web frontend should consist of fundamental frontend technology stacks (HTML, CSS, JavaScript, and its frameworks such as Vue Framework)			
		Staffing Requirements A maximum of two NodeJS Developers must be part of the team until the software requirements are delivered. A maximum of one Frontend Developer must be part of the team until the software requirements are delivered.			
		Technical support During the hyper care and cloud server 12 months subscription, technical support is requested to be provided expeditiously, at the 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 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			



2	Extension of bid submission deadline	Please be informed that the Deadline for the submission
		of proposals has been moved to 23 June 2022, 1 AM,
		Eastern Time.

Please be guided accordingly.

Renewable Energy Management Bureau Data Warehouse and Management Information System

System Overview and Required Manpower

May 27, 2022

High-Level Design Plan

REMB Internal 'Current' Process

INPUT	PROCESS	OUTPUT	
Biomass Renewable Energy Info		Biomass Report	
Hydro and Ocean Renewable Energy Info	Input of RE information into excel file and submit the report to TSMD	Hydro and Ocean Report	
Geothermal Renewable Energy Info		Geothermal Report	
Solar and Wind Renewable Energy Info		Solar and Wind Report	
TSMD X X X X	TSMD consolidates these reports into another excel file	Summary Reports On-Demand Reports	

REMB TO-BE Process

INPUT	PROCESS	OUTPUT
Biomass Renewable Energy Data Entry and File Upload in the System		
Hydro and Ocean Renewable Energy Data Entry and File Upload in the System	The system consolidates the Renewable Energy Data	Summary Reports and Dashboard Ad hoc Reports GIS
Geothermal Renewable Energy Data Entry and File Upload in the System	RIS	
Solar and Wind Renewable Energy Data Entry and File Upload in the System		

System Overview

The Renewable Energy Management Bureau **Data Warehouse and Management Information System**, also known as RIS, is a web-based application that will consolidate all the existing Renewable Energy Information available in different warehouses into a centralized database which will be made available through the internet. The system will aggregate the data and present them in a logical format that the REMB management can then use to aid them in the decision-making process.



System Integration

The RIS will be integrated into the **REMB Portal**.

The portal will host the integration and dissemination of the information from the RIS.

Note: REMB Portal is part of the DOE Portal project that will be developed separately.



Data Flow



Functional Flow



Features

- 1. System registration and logging in
- 2. Customization of the dashboard
- 3. Data and file management
- 4. Generation of reports
- 5. User and access management
- 6. Create an interactive Geographical Information System (GIS) and analyze spatial information
- 7. Work planning and management of schedules
- 8. Webform building
- 9. Audit trail procedures
- 10. Approval and disapproval workflow

- 11. System Integration
 - EVOSS
 - REMB PORTAL
 - SSO
- 12. Other features
 - Search and Data Filter Functions
 - Bell and Email Notifications
 - Help System
 - Feedback and Complaints Form
 - RPS Requirements
 - Quick Links to Policy Mechanisms

System Configuration

The web application can be accessed using any major web browser and should be mobile responsive. It requires a connection to the internet to access the application. After accessing the Uniform Resource Locator (URL), it can be used immediately without any further configuration.

Main Menu

- Dashboard
- User Profile
- Renewable Energy
- File Manager
- RPS

- RE Plants
- Maps
- Calendar
- Build Form
- Settings

ANNEX A

System High-Level Design Plan

A. System Overview

The Renewable Energy Management Bureau Data Warehouse and Management Information System, also known as RIS, is a web-based application that will consolidate all the existing Renewable Energy Information available in different warehouses into a centralized database which will be made available through the internet.

The system will aggregate the data from different REMB sectors and present them in a logical format that the REMB management can then use to aid them in the decision-making process.

The RIS will be integrated into the REMB Portal. The portal will host the integration and dissemination of the information from the RIS.

Note: REMB Portal is part of the DOE Portal project that will be developed separately.

B. Conceptual Framework



C. Summary of System Features

The RIS will be accessible to all concerned divisions and field offices of REMB based on the given access rights. The following activities can be performed in the system:

- System logging in security mechanism
 - Logging in via SSO
 - Update profile information
- □ Customization of user dashboard
 - Display statistics of RE projects and details (per Energy Sector, per Field Office)
 - o Display RE metrics data through various mediums
 - RE Performance Assessment dashboard
 - o Easy-to-read Charts and Graphs

- Creation of own dashboard gadget
- □ Data and file management
 - Renewable Energy information
 - Daily Operations Highlights
 - Weekly Operations Highlights
 - Upload/Download of files in CSV format
- Generation of reports
 - Summary of Awarded RE Projects (Integration to EVOSS)
 - Summary of Pending RE Projects
 - Summary Report by Energy Sector and by Field Office
 - Installed Capacity Report
 - o Potential Capacity Summary Report
 - Additional Capacity Installation Report
 - o Thermal Capacity Summary Report
 - RDF Capacity Summary Report
 - Total Relinquished RESCS Report
 - Total Terminated RESCS Report
 - o Geothermal Power Performance
 - Creation of customized Reports
 - Export Reports in excel, csv, pdf, and word formats
- □ User and access management
 - Management of user records
 - Management of permission sets
 - Management of general system configurations
- Create an interactive Geographical Information System (GIS) and analyze spatial information
 - RE Resource Map
 - RE Resource Information by location (e.g., Project location, Region, Nationwide)
 - List of Potential Sites
 - List of Barangays at risk
 - List of Operational Powerplants
 - Installed Capacity per location
 - Geothermal Potential
 - Location map of targeted Capacity
 - Other information to be determined
- □ Work planning and management of schedules
 - Creation of Appointments and Events
 - Viewing of Group Schedules
 - Management of another user's calendar
- Webform building
 - Creation of a webform
 - Setting up of form design, system flow, approval process, etc.
 - Drag-and-drop feature
- Audit trail procedures
 - Audit trail information
 - o Audit trail report
- □ Approval and disapproval workflow
- □ Systems Integration
 - EVOSS integration of Contract Profiles and Project Profiles

- REMB Portal dissemination of REMB MIS information to the REMB child portal
- \circ SSO log in to REMB MIS shall be via the DOE's single-sign-on mechanism
- Mail Server an email notification shall be established for every event trigger
- Other systems to be determined
- □ Search and data filter functions
 - Search from contents of files (system records, PDF file, excel file, word file, etc.)
 - Displayed on each page of the system
- Bell and Email Notifications
 - Send and receive system alerts and notifications from the system on certain pre-configured data update events
- Other features
 - Help System
 - Feedback and Complaints Form
 - RPS Requirements
 - Quick Links to Policy Mechanisms

D. System Configuration

The web application can be accessed using any major web browser and should be mobile responsive. It requires a connection to the internet in access application. After accessing the Uniform Resource Locator (URL), it can be used immediately without any further configuration.

E. User and Role Mapping

User	Role
NREB – TSMD Administrator	System Administrator
SRS I, II, III	Filer
Sr. SRS	Filer, Approver
Supervising SRS	Approver
Division Chief	Approver
Upper Management, ITMS, Other External Users	Watcher/Viewer
TSMD Sr. SRS	Receiver

F. Workflow Steps

- □ The REMB internal user goes to a web page that embeds the system workflow and login process.
- □ The REMB internal user logs in to the system. The REMB system modules are configured so that the system display different screen type as the user role changes (e.g., Biomass user can also see the Biomass RE data).
- □ The REMB internal user creates a Renewable Energy record which contains the project profile information, company and contract profile, FIT monitoring information, financial commitment information, green jobs generated information and RE project status.
- □ All system transactions and records will be displayed in a list table.

- □ All system records will undergo a review and approval process.
- □ The record entered by the REMB concerned division is automatically populated for the view of the Technical Services Management Division (TSMD).
- □ All system records will be sent to the system database for generation of reports, the population of GIS data, and other future use.

G. System Menu and Navigation

The RIS is a tabbed application, which consists of ten (10) major tabs. Main Menus will be used to navigate features of the system and guide the user to the action or information they seek.

- Dashboard
- User Profile
- □ Renewable Energy
- File Manager
- □ RPS
- RE Plants
- Maps
- □ Calendar
- □ Build Form
- □ Settings

ANNEX B

Schedule of Activities

Task Name	Duration	Predecessors	Resource Names
REMB MIS - Software Components	163.75 days		
Initiating	5 days		
Initiate Project Details	1 day		Project Manager
Prepare Project Plan	2 days	3	Project Manager
Develop Communication Plan	2 days	3	Project Manager
Develop Risk Management Plan	2 days	3	Project Manager
Conduct Internal Kick-off Meeting	0.25 days	6	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Onboard Firm Resources	0.75 days	6	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Conduct External Kick-off Meeting (with REMB)	0.25 days	8	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Perform Project Audit	1 day	9	Project Manager
Planning and Preparation	11 days		
Plan Project Activities	1 day	10	Project Manager

Task Name	Duration	Predecessors	Resource Names
FS Walkthrough	3 days	12	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Develop User story Board	3 days	13	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Review of User stories with Project Team	1 day	14	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Finalize Project Activities	0.5 days	15	Project Manager
Create Deliverables and Risk Registry	0.5 days	16	Project Manager
Set up Development Environment	1 day	17	Data Center Specialist
Perform Project Audit	1 day	18	Project Manager
Executing	109.5 days		
Plan Test Activities	5 days	19	Quality Assurance Tester
Iteration 1	18.5 days		
Develop Iteration 1 (System UI Design and Quick Wins)	10 days	18	Full Stack Developer 1, Full Stack Developer 2, UI/UX Designer
Unit Test Iteration 1	2 days	23	Full Stack Developer 1, Full Stack Developer 2, UI/UX Designer
Functional Test Iteration 1	5 days	24	Quality Assurance Tester
Conduct Iteration 1 Demo with REMB	0.5 days	25	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Review Product Backlogs	1 day	26	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Iteration 2	36.5 days		Ť
Develop Iteration 2 (Backlogs + REMB Portal Integration)	20 days	27	Full Stack Developer 1, Full Stack Developer 2, UI/UX Designer
Unit Test Iteration 2	5 days	29	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, UI/UX Designer
Functional Test Iteration 2	10 days	30	Quality Assurance Tester
Conduct Iteration 2 Demo with REMB	0.5 days	31	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Review Product Backlogs	1 day	32	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Iteration 3	37.5 days		
Develop Iteration 3 (Backlogs + Data Migration)	15 days	33	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, UI/UX Designer
Integrate REMB MIS and REMB Portal	5 days	35	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, UI/UX Designer
Unit Test Iteration 3	2 days	36	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, UI/UX Designer

Task Name	Duration	Predecessors	Resource Names
Functional Test Iteration 3	15 days	37	Data Center Specialist, Quality Assurance Tester
Migrate REMB Data and Contents	22 days	35	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Quality Assurance Tester, UI/UX Designer
Conduct Iteration 3 Demo with REMB	0.5 days	39	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
User Acceptance Testing	16 days		
Conduct User Acceptance Testing (REMB)	4 days	40	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Conduct User Acceptance Testing (LFO)	2 days	42	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Conduct User Acceptance Testing (VFO)	2 days	43	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Conduct User Acceptance Testing (MFO)	2 days	44	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Modification based on Feedback	5 days	45	Full Stack Developer 1, Full Stack Developer 2, UI/UX Designer
Conduct Final Product Demo	0.5 days	46	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
UAT Sign-off	0.5 days	47	Project Manager
Perform Project Audit	1 day	48	Project Manager
Training	11 days		
Plan Training Activities	2 days	49	Project Manager
System Admin Training	2 days	51	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
REMB End-Users Training	2 days	52	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
LFO End-Users Training	1 day	53	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
VFO End-Users Training	1 day	54	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
MFO End-Users Training	1 day	55	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Training Sign-off	1 day	56	Project Manager

Task Name	Duration	Predecessors	Resource Names
Document User Manual	5 days	49	Project Manager
Perform Project Audit	1 day	57	Project Manager
Final Preparation	10 days		
Plan Cut-over Activities	3 days	59	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Inform REMB of the Go Live Schedule	1 day	61	Project Manager
Plan Transition to Operations Management	5 days	62	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Perform Project Audit	1 day	63	Project Manager
Deployment	3 days		
Deploy System to Production	1 day	64	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Perform Smoke Testing	1 day	66	Project Manager, Quality Assurance Tester
Go Live	1 day	66	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Project Manager, Quality Assurance Tester, UI/UX Designer
Perform Project Audit	1 day	68	Project Manager
Hypercare	15 days		
Perform 14 days Hypercare Support	14 days	68	Data Center Specialist, Full Stack Developer 1, Full Stack Developer 2, Quality Assurance Tester, UI/UX Designer
Project Sign-off	1 day	71	Project Manager
Perform Project Audit	1 day	71	Project Manager
Closing	1.25 days		
Conduct Closure Meeting	0.25 days	73	Project Manager
Update WBS Charge Account Status	0.25 days	75	Project Manager
Secure Closure Document Sign-off	0.25 days	75	Project Manager
Secure Project Acceptance Certificate	0.25 days	75	Project Manager
Send Stakeholders Satisfaction Survey	1 day	75	Project Manager
Prepare Project Final Report	1 day	75	Project Manager

ANNEX C

Format for Project Composition Board

Company Overview	[insert]				
Rate Card					
	Project Role / Job Function		Level	Monthly Rate	
	Full-Stack Developer	ull-Stack Developer		[insert]	
	UI/UX Designer	X Designer		[insert]	
	Quality Assurance Tes	/ Assurance Tester		[insert]	
	Data Center Specialist		Senior	[insert]	
Technology					
Stacks	Function Area	Sel Teo	lected chnologies	Advantage	
	Backend Development	[insert]		[insert]	
	Frontend Development	[ins	sert]	[insert]	
	Testing	[ins	sert]	[insert]	
	Cloud Server	[insert]		[insert]	
Cloud Subscription Specifications	[insert]				
Testing Strategies	[insert]				
Code Quality Assurance	[insert]				
UI/UX Sample Design	[insert]				

ANNEX D: Technical Specifications

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	Bidder's Compliance
1. Software requ	uirements	
	Intellectual Property exclusively belongs to UNDP and the DOE/REMB: UNDP and the DOE/REMB are contracting development services. Correspondingly, the Contractor shall provide all source codes and assign all intellectual rights to the UNDP and DOE/REMB and may not reuse them for any other purpose. The Contractor warrants and represents that the DOE/REMB, as the End-user, will be granted the same rights granted to UNDP.	[response]
Ownership, Intellectual Property, Licenses, Source Codes, and SDKs	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 that may be created out of or in connection with the Contractor's performance of services and delivery of work covered.	[response]
	There shall be no hidden costs: The Contractor 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 the production of the solution as requested must be included in the offer, and no extra costs can be accepted thereafter to comply with the requirements.	[response]

	Technical Specifications	Bidder's Compliance
	There shall be no time or usage limitation or other restrictions on third-party products or libraries the Contractor 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.	[response]
Copyright infringement	The Contractor 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 Contractor for the performance of the Services or the creation of the Application.	[response]
	Continuous Integration and Version Control: The building of the applications from source code and other artifacts shall be fully/semi-automated, and user-friendly. The source code will be made available throughout the project using a git code repository.	[response]
	The continuous integration and version control tools must be made securely accessible to UNDP and DOE/REMB designated staff.	[response]
Release Management	Each commit to the code repository will include a relevant description of what the commit covers as issues or features.	[response]
	If there are problems with the deployment of a release and the End User/UNDP are not able to get a release installed, the Contractor shall assist in getting the release deployed to the satisfaction of End-User/UNDP.	[response]
	Unit, integration, load/stress, and security tests (based on OWASP Application Security Verification Standard) must be provided for all requested features. A white box testing approach will be used. Additional random (monkey) testing could be added, as necessary.	[response]

	Technical Specifications	Bidder's Compliance
	The Contractor must maintain an issue tracking system where the Contractor and UNDP along with DOE/REMB together can follow up on issues related to this project.	[response]
Issue Tracking during Hyper care period	All tickets, regardless of their status, must be accessible by UNDP and DOE/REMB.	[response]
	The issue tracking system and its content should be transferred to a DOE/REMB server before the end of the hyper care period.	[response]
	 A developer manual should: a. List all technologies, toolkits, and libraries used in the software. b. Describe the architecture of the system in detail. 	[response]
Documentation	The developer manual must be provided in the form of a wiki platform. It is set up at the beginning of the project and its content must reflect the delivery progress of the software.	[response]
	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.	[response]
	The developer wiki platform and its content should be transferred to a DOE/REMB server before the end of the hyper care period.	[response]
	Application access control shall be established, documented, and reviewed based on business and information security requirements.	[response]
	The application shall have a user registration and de- registration process implemented to enable the assignment of access rights.	[response]

	Technical Specifications	Bidder's Compliance
	Access to applications shall be controlled by a secure log- on procedure.	[response]
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. The code repository and issue tracker must be based on gitea/GitHub.	[response]
	There should be open-source automation to be used for continuous integration (i.e., Jenkins, Atlassian Bamboo, etc.)	[response]
	SonarQube or any similar application for automatic code reviews. The tool will have to be configured to check against OWASP vulnerabilities.	[response]
	The database must be based on MySQL stacks.	[response]
	The backend must be based on <mark>NodeJS stack</mark> <mark>technologies/server-side languages</mark> .	[response]
	The web frontend should consist of fundamental frontend technology stacks (HTML, CSS, JavaScript, and its frameworks such as Vue Framework)	[response]
	Use an extensible logging framework like SLF4J with Logback, or Apache Log4j2, to ensure that all log entries are consistent.	[response]
	Because some frameworks have security flaws, build in additional controls or security protections as needed.	[response]
	The system must be cross-platform optimized for mobile phones/tablets.	[response]
	The deployment must be based on Docker and/or Kubernetes.	[response]

	Technical Specifications	Bidder's Compliance
	The Contractor shall Implement Rollback or Catch-Up Plan when necessary.	[response]
	The Contractor shall select the most secure and stable versions of software components that are put together into the system. The Contractor shall conduct an 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 Contractor shall replace software components right after the discovery of its flaws and there is no remediation available.	[response]
	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).	[response]
	The system shall be interface ready.	[response]
	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.	[response]
	Common components can be shared and reused so that adding, removing, and enhancing a function or feature can be easily done without any major re-coding 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.	[response]
Software, Hardware, and Infrastructure	The Contractor 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 harming any data,	[response]

Technical Specifications		Bidder's Compliance
	software, hardware, or infrastructure pertaining to DOE/REMB.	
	The Contractor shall ensure that all Software, Hardware, and Infrastructure used in the Services, including Firewalls, routers, network switches, and operating systems, shall log information to their respective system log facility or a centralized Syslog service in order to enable security reviews and analysis.	[response]
	Web server error responses shall avoid allowing server details, diagnostic data, and/or debugging information to be retrieved by the public	[response]
	The system's graphical user interface must support access via the internet.	[response]
GUI	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.	[response]
	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 applications shall use HTTPS.	[response]
Data Protection	Avoid using an inadequate key, or storing the key along with the encrypted data	[response]
	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.	[response]
2. Staffing Requ	irements	

	Technical Specifications	Bidder's Compliance
	By delivered, it is meant that the requirements above are developed, tested, and accepted by UNDP as per conditions described in this ITB.	[response]
	Unless otherwise requested, all staff working on this project must meet the level of expertise and number of years of experience in the requested area and technologies.	
	A maximum of two NodeJS Developers must be part of the team until the software requirements are delivered.	[response]
Staffing	A maximum of one Frontend Developer must be part of the team until the software requirements are delivered.	[response]
Requirements	A maximum of one Data Center Specialist must be part of the team until the software requirements are delivered.	[response]
	A maximum of one QA Tester/Quality Engineer must be part of the team until the software requirements are delivered.	[response]
	CVs must be provided for each resource mentioned in the requirements at bidding times.	[response]
	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	
Schedule and operational requirements	The software's minimum requirements will have to be developed in three 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.	[response]
4. Technical Su	oport	
	The Contractor will among others, but not exclusively, assist preparations, installations, and readiness of all provided	[response]

Technical Specifications		Bidder's Compliance
	software modules for the pilots, go live, and hyper care period.	
	At least the same development team must be ready for the provision of expedited and enhanced second-level support to the DOE/REMB Main Office and FOs in relation to the items provided as per the Contract, up to date.	[response]
	This refers essentially to support fixing issues with software and advising on infrastructure issues, including data capture, storage, communication amongst units and reporting, and help on data consolidation.	
	During the hyper care and cloud server 12 months subscription, technical support is requested to be provided expeditiously, at the following target customer status update time:	[response]
	 Critical: Every 60 minutes or as agreed upon with the End User/s 	
	Target Resolution Time: 4 hours or less	
Technical Support	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	
	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 the problem as required (travel and accommodation for this item should not be included in the offer as it will be conducted on a need basis and paid for accordingly).	[response]
	The cloud server shall have a monthly availability of 98%, measured on a 24x7 basis. System availability requirements do not vary by time of day.	[response]

	Technical Specifications	Bidder's Compliance
	The system and the cloud server shall have a maximum tolerable downtime of 1 hour, during which time the system's operation shall be switched over to the backup site.	[response]
	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 on other running processes or user transactions	[response]
	The software that will be developed by the Contractor shall be running and available for functional processing 98% of the time.	[response]
5. Training and	know-how transfer	
Training and Awareness	The Contractor, together with the REMB MIS Technical Coordinator shall provide training for all DOE/REMB MIS users.	[response]
	The Contractor shall provide training for DOE/REMB MIS cloud server administrators.	[response]
6. Project Mana	gement and Implementation Requirements	
	The Contractor must have a collaborative platform such as Dropbox/Google Drive that stores and secures files in a central location.	[response]
Communication Methods	A short daily meeting (through conference calls as necessary) will be made to follow up on the 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.	[response]
Monitoring	Written communication on the project's progress must be made every completion of an iteration, or more frequently if	[response]

	Technical Specifications	Bidder's Compliance
	requested by UNDP. Communication should include relevant project information and updated excerpts from the project's risk management plan.	
7. Deliverable A	cceptance Process	
	The deliverables will be subject to acceptance testing. The tests are made jointly by UNDP, DOE/REMB, and the Contractor, where UNDP and DOE/REMB provide guidance on the general test case and acceptance criteria, and the Contractor 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.	[response]
	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 Contractor will fix any defect discovered during the hyper care support period in accordance with the Service Level requirements defined in the Technical Support section above. 	
Delivery Acceptance Process	 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 Support section above apply. The Contractor is still liable to address defects raised by UNDP or the DOE/REMB. 	
	 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.	

	Technical Specifications	Bidder's Compliance
	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.	[response]
8. Compliance		
Compliance	The bidder must agree in writing to all requirements with <u>no</u> <u>deviation</u> 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 the agreement of UNDP.	[response]
9. Monitoring, A	udit, and Accountability	
	The system shall incorporate non-repudiation mechanisms to ensure data changes are undeniably linked to user accounts.	[response]
Monitoring, Audit, and Accountability	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.	[response]
	The system must have logs for traceability of system events.	[response]
	The system must have an audit trail that records all user actions.	[response]

ANNEX E: Sample REMB Reports/ Templates

In-Scope Process: Storing and processing (such as encoding, uploading, approval) of all awarded RE projects and their related processes.

Out of Scope Process:

- 1. RE Project Profiling and Application this is being managed by an existing transaction processing system of DOE/REMB.
- 2. RE Project Pre-application Information, LOI, and Attachments this is being managed by an existing transaction processing system of DOE/REMB.

FEATURE COMPARISON	Existing Transaction Processing Systems of REMB		System to be Developed
LIST OF PROCESSES	EAMS	EVOSS	RIS
Tracking of Pre-Application Information, LOI and Attachments	Ø		
Geographical Information System (GIS) Tranmission and Distribution Lines			Ø
Identification of Ideal sites for future RE projects			Ø
Application Status Tagging		Ø	
Renewable Energy Portfolio Management			S
Storing and Processing of Biomass Data			Ø
Storing and Processing of Geothermal Data			Ø
Storing and Processing of Cost of Investments and Green Jobs Data			0
Storing and Processing of Feed in Teriff Data			0
Storing and Processing of Hydro & Ocean Data			0
Storing and Processing of Solar & Wind Data			Ø
RE Data Visualization			S

1. REMB Organizational Chart

a. Office of Bureau Director and Assistant Director



b. Biomass Energy Management Division



c. Hydropower and Ocean Energy Management Division



d. Solar and Wind Energy Management Division



e. Geothermal Energy Management Division



f. NREB Technical Services and Management Division



B Q

2. Daily Operations Highlight Report Template (to be developed as a web form)

a. Generation

								DEPAR	TMEN	T OF I	ENERGY								
								ICAVAC/			VETEM ODED	ATION							
							(102014)4	тэмтнэј	WIINDA	NAO) 3	TSTEIN OFER	ATION							
								DAILY O	PERATIO	DNS HIC	SHLIGHTS								
									(DA	ATE)									
		GEOTHERMAL				HYDRO				BIOMASS			-	SOLAR			-	WIND	
	C	AP (MW)	PLANNED	nourre	CAP	(MW)	PLANNED	nouvrn	CAP	(MW)	PLANNED	nout	CA	P (MW)	PLANNED	nower	CAP	(MW)	PLANNED
PLANTS	RATED	AVAIL	GENERATION (MWh)	PLANTS	RATED	AVAIL	GENERATION (MWh)	PLANTS	RATED	AVAIL	GENERATION (MWh)	PLAN	S RATED	AVAIL	GENERATION (MWh)	PLANTS	RATED	AVAIL	GENERATION (MWh)
	E	MBEDDED (EM)			EME	EDDED (EN	4)		EME	EDDED (EI	VI)		Ef	1BEDDED (EI	M)		EME	BEDDED (EI	4)
SPP 1	0	0	0	HPP 1	0	0	0	BPP 1	0	0	0	SPP 1	0	0	0	WPP 1	0	0	0
SPP 2	0	0	0	HPP 2	0	0	0	BPP 2	0	0	0	SPP 2	0	0	0	WPP 2	0	0	0
				-				-				-				-			
m	GPI	CONNECTED /G	0	EIVI	GRID CI	ONNECTED	(60)	EIVI	GRID CI	DNNECTED	160	EIM	GRID	CONNECTER	UGC)	EIVI	GRID CI	ONNECTED	160
500.1	0	0	0	HPP 1	0	0	0	RDD 1	0	0	0	500.1	0	0	0	WDD 1	0	0	0
PP 2	ō	ō	ō	HPP 2	ō	ō	ō	BPP 2	ō	ō	ō	SPP 2	ō	ō	ō	WPP 2	ō	ō	0
	0	0	0	GC	0	0	0	GC	0	0	0	GC	0	0	0	GC	0	0	0
OTAL	0	0	0	TOTAL	0	0	0	TOTAL	0	0	0	TOTAL	0	0	0	TOTAL	0	0	0
OTAL R	ATED CAP	ACITY(MW):		TOTAL A	VAILABLE	CAPACITY	(MW):	TOTAL G	ENERATIO	N CAPAC	ITY(MWh):								
		–																	

b. Plant Outage

			-					-
	D	EPART	MENT	OF EI	NERG	1		
(L	UZON/VIS	AYAS/N		IAO) SY	STEM C	OPERAT	ION	
	D	AILY OP	ERATIO	NS HIG	HLIGHT	•		
			(DA	ΓE)				
SMISSION L	INE OUTAGE				1	ŀ		
LINES					DEMARKS			OUTAG
LINES	DATE OUT	DATE IN			REIVIARIAS			CLASS
								L

3. Daily Operations Report Template (to be developed as a web form)

a. Generation

1	A	В	С	D	E F	G	н	I.	J K	L	м	N	O P	Q	R	S	T U	V	W	х
1								D	DEPART	MENT	OF E	NERGY								
2																				
3								(LUZON/VI	SAYAS/N			STEM OPERA	TION							
									DAILYC	DEDAT		FRORT								
-									DAILTO	(DA)										
5										(DA	15)									
7		G	EOTHERMAL				HYDRO			8	IOMASS				SOLAR				WIND	
8	POWER	C	AP (MW)	ACTUAL	POWER	CAP	(MW)	ACTUAL	POWER	CAP	(MW)	ACTUAL	POWER	CAP	(MW)	ACTUAL	POWER	CAP	(MW)	ACTUAL
9	PLANTS	RATED	ACTL	GENERATION (MWh)	PLANTS	RATED	ACTL	GENERATION (MWh)	PLANTS	RATED	ACTL	GENERATION (MWh)	PLANTS	RATED	ACTL	GENERATION (MWh)	PLANTS	RATED	ACTL	GENERATION (MWh)
10		EN	ABEDDED (EM)			EMB	EDDED (Ef	4)		EMB	EDDED (EI	VI)		EMB	EDDED (EI	VI)		EMB	EDDED (Ef	(1)
11	GPP 1	0	0	0	HPP 1	0	0	0	BPP 1	0	0	0	SPP 1	0	0	0	WPP 1	0	0	0
12	GPP 2	0	0	0	HPP 2	0	0	0	BPP 2	0	0	0	SPP 2	0	0	0	WPP 2	0	0	0
13	514				EM				50.4				534				EM			
15		GRID	CONNECTED (GC	1		GRID C	ONNECTED	(GC)		GRID C	DNNECTED	(GC)		GRID O	ONNECTED	(GC)		GRID C	ONNECTED	(GC)
16	GPP 1	0	0	0	HPP 1	0	0	0	BPP 1	0	0	0	SPP 1	0	0	0	WPP 1	0	0	0
17	GPP 2	0	0	0	HPP 2	0	0	0	BPP 2	0	0	0	SPP 2	0	0	0	WPP 2	0	0	0
18																				
19	GC	0	0	0	GC	0	0	0	GC	0	0	0	GC	0	0	0	GC	0	0	0
20	TOTAL	0	0	0	TOTAL	0	0	0	TOTAL	0	0	0	TOTAL	0	0	0	TOTAL	0	0	0
21																				
22																				
23	TOTAL RA	TED CAPAC	:ITY(MW):		TOTAL A	VAILABLE	CAPACITY	'(MW):	TOTAL G	ENERATIO	N CAPAC	ITY(MWh):								

b. Plant Outage

	A	D	C	U	E	F	G	п		J
1				DEPAR	TMEN	T OF E	NERG	Y		
2										
3		()	LUZON/V	ISAYAS/	MINDA	NAO) S	YSTEM	OPERA ⁻	TION	
4		•	-	DAILY	OPERAT		REPORT			
_					(D)	TE)				
2					(04	16)				
þ										
(PLANT O	JTAGE								
3	P	LANTS	DATE OUT	DATE IN			REMARKS			TOTAL OUTAGE (DAYS)
9	FORCED									
0	PP 1									
1	PP 2									
2										
3										
4	PLANNED)								
5	PP 1									
6	PP 2		Po		1				Dage	3
7				IYC					1 age	0
8				0						
9	DEACTIV	ATED								
0	PP 1									
1	PP 2									
2										
3										
4	RESERVE	SHUTDOWN								
5	PP 1									

4. Sample Daily Operations Highlights of NGCP (Reference only, not in scope)

	GC G POWER & PR				DA		JZO Y O	N SYS PERA Saturda	ΓΕΜ ΓΙΟΝ 1y: Ma	OP IS H y 09,	ERA HIG	ATIONS HLIGE	ITS						
G	OTHERMAL	(GEOT)		THE	RMAL (TE	HER)		I	YDRO (HY	DR)			GAS			RE	NEWABLE	(RE)	
PLANTS	CAP (M RATED	W) 1 AVAIL	PLNDGEN (MWh)	PLANTS	CAP (MV	V) I VAIL	PLNDGEN (MWh)	PLANTS	CAP (M RATED A	W) PI NAIL	LNDGEN (MWh)	PLANTS	CAP (M RATED	W) F WAIL	LNDGEN (MWh)	PLANTS	CAP (M RATED A	N) PI NAIL	LNDGEN (MWh)
	EMBEDDED	(EM)			COAL			E	MBEDDED	(EM)		GRID	CONNECT	ED (GC)			BIOMASS	;	
MAI	20.0	19.0	456	EMI	BEDDED (EM)		BOTOCAN	21.6	0.0	0	AVION 1	50.0	44.0	0	EN	IBEDDED ((EM)	
MAI2	12.0	11.0	264	CALUMPI	26.0	0.0	0	MARIS 1	3.8	1.0	0	AVION 2	50.0	43.0	0	ACNPC	3.2	1.0	0
MAIBARAH	A 32.0	30.0	720	PETRON 1	35.0	4.0	0	MARIS 2	3.8	0.0	24	AVION	100.0	87.0	0	CADPI	25.0	0.0	0
EM	32.0	30.0	720	PETRON 2	35.0	11.0	0	MARIS	7.6	1.0	24	ILIJAN A1	204.0	190.0	10,200	MONTALBAN	4.0	2.0	41
GF	ID CONNECT	TED (GC))	PETRON 3	35.0	0.0	0	SMITHBELL	1.8	0.0	0	ILIJAN A2	204.0	190.0	0	PANGEA	0.8	1.0	24
BM 1	60.0	0.0	0	PETRON 4	35.0	0.0	0	EM	31.0	1.0	24	ILIJAN A3	204.0	220.0	10 200	EM	33.0	4.0	65
BM 2	60.0	60.0	0	PETRON	140.0	15.0	0	GRII	CONNECT	ED (GC)		ILIJAN BI	204.0	190.0	10,200	GRID	CONNECT	ED (GC)	
BM 3	20.0	20.0	0	EM	100.0	15.0	0	AMBUKLAO	105.0	105.0	100	ILUAN B2	204.0	190.0	0.200	I-POWER	10.8	9.0	216
BM 4	20.0	0.0	1,920	GRID C	ONNECTI	ED (GC)		AMPOHAW	12.5	1.0	24	ILIJAN B3	204.0	220.0	0	I-POWER 2	10.8	11.0	0
BACMAN	160.0	80.0	1,920	ANDA	82.0	0.0	0	ANG (A)	46.0	9.0	264	ILIJAN B	612.0	600.0	10,200	I POWER SAN	. 21.6	20.0	216
LUZON-LE	YTE 0.0	0.0	0	ASIA PACIFIC I	52.0	0.0	0	ANG (M)	200.0	84.0	587	LMY A 1	70.0	60.0	0	BBEC	5.0	4.0	96
MB I	63.2	41.0	0	BCF 1	300.0	200.0	4,320	ANGAI DATO: CDUDC	240.0	93.0	851	LMY A 2	70.0	60.0	0	BT2020COGEN	13.0	11.0	264
MB 2	63.2	40.0	0	BCF 2	300.0	300.0	7,200	BAKIN SINIPS	12.4 35.0	4.0	48.	LMY A 3	70.0	60.0	0	CBEC	13.5	14.0	330
MB 4	63.2	39.0	ő	BATANGAS CO.	000.0	500.0	11,520	BAK 2	35.0	2.0		LMYA4	100.0	90.0	0	CBEC	13.5	14.0	330
MB 5	55.0	0.0	0	GNP 1 CNID 2	323.8	316.0	7,584	BAKUN HYDI	RC 70.0	6.0	481	ILIMAY A	310.0	270.0	0	CIEANGREEN	10.8	17.0	48
MB 6	55.0	0.0	0	CNPOWER	651.6	632.0	15 169	BINENG	19.2	1.0	24	LMY B 5	70.0	60.0	0	CRASSCOLD	12.0	11.0	204
MB D	40.0	0.0	0	MSNLC 1	315.0	0.0	10,100	BINGA	131.0	137.0	96	LMY B 6	70.0	60.0	0	GREEN FUTUE	10.0	0.0	240
MB E	40.0	20.0	4,344	MSNLC 2	344.0	344.0	6 623	CALIRAYA	24.0	0.0	0	LMY B /	/0.0	60.0	0	IBEC	20.0	18.0	ő
MAKBAN	442.8	180.0	4,344	MSNLC 3	335.0	0.0	0	CASEC 1	70.0	0.0	0	LMIDO	210.0	370.0	0	VSGRIP	5.4	0.0	48
MB O	16.0	2.0	48	MASINLOC	994.0	344.0	6,623	CASEC 2	70.0	0.0	0	SAN GABRIEL	414.0	415.0	7 187	GC	131.9	95.0	1,506
MAKBAN C	RM 16.0	2.0	48	PBL 1	382.0	0.0	0	CASECNAN	140.0	0.0	0	SN LO 1	265.0	265.0	5.954	BIOMASS	164.9	99.0	1,571
TW 1	60.0	0.0	0	PBL 2	382.0	382.0	7,647	HEDCOR	21.0	0.0	0	SN LO 2	265.0	262.0	6,046	—	COLUD		

5. Summary of Renewable Energy Projects (Count of Awarded and Pending Project will be coming from EVOSS; to be displayed in the System Dashboard)

AWARDED PROJE	ECTS UNDER RE	LAW				
RESOURCES	AWARDED	PROJECTS	POTENTIAL CA	PACITY MW	INSTALLED CA	PACITY MW
	Commercial	Own-Use	Commercial	Own-Use	Commercial	Own-Use
Hydro Power	444		13,467.53		973.54	
Ocean Energy	6		26.00			
Geothermal	41		575.00		1,906.19	
Wind	64	1	2,381.50		426.90	0.006
Solar	216	16	6,882.92	4.286	905.18	3.218
Biomass	55	24	346.68	16.77	407.15	128.16
Sub-Total	826	41	23,679.63	21.056	4,618.96	131.38
TOTAL	867	1	23,700	.69	4,750.	34

NOTE:

* - excluding 55 installed projects with 3,050.47MW capacity under RA 7156, CA 120, PD 1645, RA 3601 & Own-Use

** - excluding 1 potential project with 20MW capacity under PD 1442.

PENDING APPLICATIONS UNDER RE LAW

RESOURCES	AWARDED	PROJECTS	POTENTIAL CA	PACITY MW	INSTALLED CA	PACITY MW
	Commercial	Own-Use	Commercial	Own-Use	Commercial	Own-Use
Hydro Power	93		2,307.35			
Ocean Energy						
Geothermal	4		60.00			
Wind	16		-			
Solar	83		1,445.50			
Biomass	10		96.81			
Sub-Total	206	-	3,909.66	-	-	-
TOTAL	206	;	3,909.	66	0.00)

AWARD	DED BIO	OMASS PR	ROJECTS as	of December 31, 201	.8			
ISLAND / GRID	REGION	PROVINCE	CITY / MUNICIPALITY	PROJECT NAME	COMPANY NAME	STATUS	POTENTIAL CAPACITY (MW)	INSTALLED CAPACITY (MW)
Luzon	I	La Union	Rosario	1 MW Pepsi Biomass Power Plant Project	Sure PEP, Inc.	 On-going construction; Posting of PB: N/A; Compliant with reportorial obligations Compliant to RESHERR 	0.00	1.00
		Ilocos Sur	Santa	10 MW Biomass Power Plant Project	SATRAP Power Corporation	On-going rehabilitation works; Compliant to posting of PB for Year 2; Compliant with reportorial obligations; Compliant to RESHERR	10.00	0.00
	ш	Isabela	Alicia	3.6 MW Biomass Gasification Power Plant	Lucky PPH International, Inc.	Stopped operations in 23 Nov. 2016 due to inefficiency of the plant; Issued with showcause letter dated 04 Oct. 2017 and received on 10	0.00	3.60
				20 MW Biomass Power Plant	Isabela Biomass Energy Corporation	Operational; Awarded with COE-FIT of 18 MW; Posting of PB: N/A; Compliant with reportorial obligations; A. Compliant to RESHERR	0.00	20.00
			San Mariano	19 MW Biomass Cogeneration Plant	Green Future Innovations Inc.	Operational; Awarded with COE-FIT of 14 MW capacity; Posting of PB: N/A; S. Compliant with reportorial obligations:	0.00	19.00
			Aurora	5 MW Biomass Power Plant Project	Isabela La Suerte Rice Mill Corporation	Completed construction; Compliant to posting of PB; Compliant with reportorial obligations; Compliant to RESHERR	0.00	5.00
			Burgos	15 MW Biomass Power Plant Project	Cagayan Biomass Energy Corporation	Newly awarded BREOC September 2018; 40% completed construction; For validation of milestone activities; Compliant to posting of PB Year 1	15.00	0.00
	ш	Bataan	Samal	12.5 MW Biomass Cogeneration Plant	Bataan 2020 inc.	1. Operational; Awarded with COE-FIT of 11.1MW capacity; 2. Posting of PB: N/A; 3. Compliant with reportorial obligations; 4. Compliant to RESHERR	0.00	12.50

6. Sample Awarded Biomass Project Report

7. Cost of Investments and Green Jobs Summary

Renewal	ble Energ	gy Cost of	Investme	ent: Php185	.090 Billion	
2009-2018	BIOMASS	SOLAR	WIND	HYDROPOWER	GEOTHERMAL	TOTAL
Additional Capacity	435.11 MW	928.58 MW	393.91 MW	213.04 MW	72.00 MW	2,067.23 MW
Cost of Investment (in Billion Pesos)	21.678	77.405	49.720	29.758	6.529	185.090
Note: Approxim	mately US\$3.	7 Billion				
Jobs Crea 102,090 Jobs	ated: Green			9,497 Reduc	,272.33 t- C ction (2009	<mark>02</mark> -2017)

8. Feed-in-Tariff Report

RESOURCE	INSTALLATION TARGET	ERC APPROVED FIT RATES	WITH CER ENDORSE	TIFICATE OF NENT TO ERC	INSTALLATION TARGET BALANCE
	Capacity (MW)	(PhP / kWh)	No. of Projects	Capacity (MW)	Capacity (MW)
		5.90	5	34.60	
HYDRO	250	5.8705***	1	8.50	157.96
		-	2	48.936	
	200	8.53	3	249.90	6.40
WIND	200*	7.40**	3	144.00	0.10
	50	9.68	6	108.90	
SOLAR	450*	8.69**	17	417.05	-
		6.63	15	121.561	
BIOMASS	250	6.5969***	3	12.864	98.175
		-	5	17.4	
OCEAN	10	Deferred	-	-	-
TOTAL	1,410.00		54	1,160.711	262.235

9. Additional Capacity Report

RESOURCES	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	October 2019	Own-Use	Net Metering	Total
	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW
omass	40.93	37.15	19.00	19.00	0.876	12.00	124.50	40.80	18.12	41.74	60.58	120.00		534.7
othermal		-	-	-	-	50.00	10.00			12.00				72.0
lar	-	-	-	-	-	22.00	142.47	735.72	25.20	3.20	21.00	7.03	23.77	980.3
dro Power	10.40	57.30	4.20	11.80		13.65	17.82	10.45	8.50	78.92	2.19			215.2
ean Energy	-	-	-	-	-	-								-
ind	-	-	-	-	-	303.90	90.00							393.9
DTAL	51.33	94.45	23.20	30.80	0.88	401.55	384.79	786.97	51.82	135.86	83.77	127.03	23.77	2,196.20
700.00 600.00 500.00 400.00 300.00 200.00 100.00												Wind Ocean Hydro Solar Geoth	Energy Power ermal	
	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	Biolitia	55	

10. Awarded RE Service/Operating Contracts and Certificate of Registrations for Own Use

Resource	2009	2010	2011	2012	2013	2014	2015	2016	2017	TOTAL NO. OF RESC/COR
	# of SCs	as of 2017								
Biomass	3	22	15	7	21	8	11	11	11	109
Geothermal	7	14	6	8	9	1	2	2	1	50
olar	-	1	7	27	30	40	73	48	64	290
lydropower	57	67	9	56	101	187	45	65	51	63
)cean	2	1	-	-	4	1	2	-	-	1
Vind	24	21	8	6	6	19	5	6	12	10
Total	93	126	45	104	171	256	138	132	139	1,20

11. List of existing power plant in Mindanao

PLANT TYPE	TOTAL POWER PLANTS
Coal Thermal	13
Diesel	31
Natural Gas	0
Geothermal	1
Hydro	17
Solar	5
Wind	0
Biomass	2
Battery Storage	0
TOTAL	69

Geothermal Power Type	•	Date 💌	Geothermal Power Performance 💌	
GROSS GENERATION, MWH		Jan-20	687,509.17	
GROSS GENERATION, MWH		Feb-20	806,012.51	
GROSS GENERATION, MWH		Mar-20	714796.6488	
GROSS GENERATION, MWH		Apr-20	891784.7504	
GROSS GENERATION, MWH		May-20	877274.11	
GROSS GENERATION, MWH		Jun-20	894378.1114	
GROSS GENERATION, MWH		Jul-20	871628.4436	
GROSS GENERATION, MWH		Aug-20	915244.0877	
GROSS GENERATION, MWH		Sep-20	859137.709	
GROSS GENERATION, MWH		Oct-20	845822.2966	
GROSS GENERATION, MWH		Nov-20	896890.2079	
GROSS GENERATION, MWH		Dec-20	863364.2151	
POWER GENERATION, KTOE		Jan-20	7995733.8	
POWER GENERATION, KTOE		Feb-20	9373927.949	
POWER GENERATION, KTOE		Mar-20	8313087.229	
POWER GENERATION, KTOE		Apr-20	10371459.4	
POWER GENERATION, KTOE		May-20	10202700.6	
POWER GENERATION, KTOE		Jun-20	10401620.19	
POWER GENERATION, KTOE		Jul-20	10137041.49	
POWER GENERATION, KTOE		Aug-20	10644291.56	
POWER GENERATION, KTOE		Sep-20	9991774.203	
POWER GENERATION, KTOE		Oct-20	9836915.916	
POWER GENERATION, KTOE		Nov-20	10430835.88	
POWER GENERATION, KTOE		Dec-20	10040928.48	

12. Geothermal Power Performance Summary

13. Sample existing Database Format (to be developed as a web form – main system process)



	FEED-IN TARRIFF MONITORING BOARD										
	PROJECTS UNDER FIT SYSTEM										
DATE OF DECLARATION OF COMMERCIALIT	DATE OF DATE OF CERTIFICATE OF DATE OF TARGET DATE OF CERTIFICATE OF CAPACITY CAPACITY <td< td=""></td<>										

14. RPS Form

AB	с	D	E	F	G	н	1	J	К	L	М	N	0	P
Г			!					!						
	Renewable Portfolio Standards (RPS)												
	Requirement and Compliance Form													
									_					
	A. General Information													
	1. Name of Mandated Participant in Full		On-Grid Mand	lated Participant					1					
	2. Classification of Mandated Participant		Distribution Ut	ilitiy (DU)										
	- Others (Please specify)					10								
	3. Location of Mandated Participant		On-Grid						-					
	3a. Business Address in Full:		LVM Area						-					
	3b. Address of Plant in Full (If applicable):		ļ						1					
	4. Contact Details		DDS Foral Do											
	4a. Focal Person (b. Designation		Official Design	ation/Section					-					
	4c. E-mail Address/Telephone Number		Working Email	Address		Cellphone/Offi	ce Number							
	5. Percentage of Plants under FIT (K ₀)	3.34%				1								
	• • • • •								•					
	Deere 1					Λ	-				7			
	B. RPS Requirement Computation		Year 0 2018	Transition 2019	Vear 1 2020	2021	Year 3 2022	Year 4 2023	Year 5 2024	2025	Year 7 2026	Year 8 2027	Year 9⊢'a 2028	.©⊂ Yiear 10 2029
	6. Net Electricity Sales (ES _{n-1})	(MWh)	419,075	432,418	516,211	575,807	612,304	660,935	688,347	709,428	726,969	746,553	767,275	805,454
	7. Annual Incremental RE Percentage (K _m)	(%)	-	-	1.00%	2.00%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%
	8. RPS Requirement (RPS _n)	(MWh)	-	-	18,194	27,573	36,636	45,093	55,292	64,482	73,565	82,669	92,375	102,625
	C. RPS Compliance Mechanism		Year 0	Transition	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	9 PSA from Eligible PE Plants (PSA)	(REC)	2010	2013	2020	2021	2022	2020	2024	2023	2020	2021	2020	2023
	10. Net-Metering < 100 kW (NM)	(REC)	98	96	96	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000
	11. RE Facility for Own-Use (RE-OU)	(REC)		1 .										1 .
	12. Green Energy Option Program (GEOP)	(REC)	-	-	í -	-	î -	-	-	<u> </u>	-	<u>i</u> -	-	1 -
	13. Purchased from the RE Market (REM)	(REC)	-	-	- 1	-	-	-	-	· ·	-	- 1	-	-
	14. FIT Allocation (FIT)	(REC)	13,999	16,728	22,626	23,746	23,740	24,124	23,636	22,916	22,096	21,349	20,644	20,389
	15. Total Eligible RECs	(REC)	14,097	16,824	22,722	25,746	25,740	26,124	25,636	24,916	24,096	23,349	22,644	22,389
													1	

Wireframes

REMB	RENEWABLE ENERGY MANAGEMENT BUREAU							
	REMB Datawarehouse and Management Information System							
	Email							
	Password							
	Forgot Password?							
	LOGIN							
	Don't have an account yet? Create							
	2020 Renewable Energy Management Bureau. All Rights Reserved.							

	EWABL	E ENERGY MANA	GEMEN	IT BUREAU	
REMI	B Datawa	rehouse and Manageme	nt Inform	ation System	
Please fill up this form to	create an	account.			
*Agency	•	*Division	•		
*Email Address		*Contact Number			
*Firstname		Middlename		*Lastname	-
Address					_
Province	•	City/Municipality	•	Postal Code	-
*Password		*Confirm Password			
CREATE ACCOUNT					
Already have an account? Lo	ogin				

RENEWABLE ENERGY F	ORM		RENEWABLE ENERGY FORM	1		RENEWABLE ENERGY	FORM
REFERENCE NUMBER RESOURCES BIO-05182020-00001 Biomass	DATE FILED	REFERENCE NUMBER	ENERGY RESOURCE Biomass	DATE FILED December 31, 2018	REFERENCE NUMBER	ENERGY RESOURCE	DATE FILED
STATUS FILER New Honey Samson PROJECT PROFIL	E	STATUS New	FILER Honey Samson COMPANY PROFILE		STATUS New	FILER Honey Samson	
*PROJECT NAME	*COMMERCIAL/OWN USE	*COMPANY NAME		*CONTACT PERSON		FEED-IN-TARRI	FF
1 MW Pepsi Biomass Power Plant Project	Own Use 🔻	Sure PEP, Inc.		Juan Dela Cruz	**Do not fill up if Projec	ct is not under the FIT System	
LOCATION		DESIGNATION	COMPANY ADDRESS		DATE OF DECLARATION OF	COMMERCIALITY DATE OF CE	RT OF CONFIRMATION OF COMMERCIALITY
*TYPE OF GRID *ISLAND/GRID	*REGION	Manager	Rosario, La Union				
On Grid	▼ I ▼	*CONTACT NUMBER	FAX NUMBER	EMAIL ADDRESS	DATE OF TESTING AND CO	MMISSIONING DATE OF TA	RGET COMMERCIAL OPERATION
*PROVINCE *CITY/MUNICIPALITY	BARANGAY	0917XXXXXXX	000XXXXX 🔻	companyemail@email.com			
La Union Rosario	•		CONTRACT PROFILE -				F OF ENDORSEMENT (COE) NO
LOCATION *ORIGINAL CONTRACT AREA (H	las.)	*CONTRACT NUMBER	*CERT OF REG NUMBER	*DATE AWARDED			
1 Has							
САРАСІТҮ		STAGE OF CONTRACT	MODE OF AWARDING	DATE OF DECLARATION OF COMMERCIALITY	DATE SIGNED OF COE	CAPACITY (MW)	CAPACITY FACTOR (%)
*POTENTIAL CAPACITY (MW) *INSTALLED CAPACITY (MW)	*THERMAL CAPACITY						
	0	DATE OF CERTIFICATE OF CONFIRI	MATION OF COMMERCIALITY	TARGET COMMERCIAL OPERATION DATE	PROJECTED ANNUAL ENERG	GY PRODUCTION (GWH) ACTUAL ANN	IUAL ENERGY PRODUCTION (GWH)
*RDF CAPACITY (MT/dav)							
0		TARGET OF TESTING AND COMMIS	SIONING DATE	ACTUAL COMMERCIAL OPERATION DATE	*EIT STATUS		
ADDITIONAL CAPACITY U	NDER				Not Applicable		
RE LAW		TERM (Yrs.)		MARKET PROFILE			
2018 1							NEXT PAGE
	NEXT PAGE			NEXT PAGE	ACTION		
ACTION		ACTION			REMARKS:		
REMARKS:		REMARKS:					
	CAUE			SV/E	SAVE TO EDIT LATER		SAVE
SAVE TO EDIT LATER SEND TO IMMEDIATE SUPERIOR FOR APPROVAL	SAVE	SAVE TO EDIT LATER SEND TO IMMEDIATE SUPERIOR FO	R APPROVAL	SEND	SEND TO IMMEDIATE SUPE	RIOR FOR APPROVAL	SEND
CANCEL			CANCEL			CANCEL	

OP	ERATIONS HI	GHLIGHTS F	ORM
REFERENCE NUMBER	RESOURCES		DATE FILED
GEO-RP-05182020-00001	Geothermal		December 31, 2018
STATUS	FILER		
New	Honey Samso	n	
	OPERATIO	NS HIGHLIGH	тя
*RESOURCE GROUP	*PERIOD COVER	ED	
Geothermal	December 1	, 2020 🔳	TO December 7, 2020
	CAP	(MW)	
POWER PLANTS	RATED		PLANNED GENERATION (MWh)
GPP 1			0
GPP 2	0	0	0
	· 0	0	0
	0	0	0
	0	0	0
	0	0	0
EM	0	0	0
POWER PLANTS			PLANNED GENERATION (MWh)
POWER PLANTS	CAP RATED GRID CONN	(MW) AVAIL IECTED (GC)	PLANNED GENERATION (MWh)
POWER PLANTS	CAP RATED GRID CONN 7 0 7 0	(MW) AVAIL IECTED (GC) 0	PLANNED GENERATION (MWh)
GPP 1 GPP 2	CAP RATED GRID CONN CO CO CO CO	(MW) AVAIL IECTED (GC) 0 0	PLANNED GENERATION (MWh)
GPP 1 GPP 2	CAP RATED GRID CONN 7 0 7 0 7 0 7 0 7 0 7 0 7 0 7 0	(MW) AVAIL IECTED (GC) 0 0 0 0	PLANNED GENERATION (MWh) 0 0 0 0 0 0
GPP 1 GPP 2	CAP RATED GRID CONN C 0 C 0 C 0 C 0 C 0 C 0 C 0 C 0	(MW) AVAIL IECTED (GC) 0 0 0 0 0	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0
GPP 1 GPP 2	CAP RATED GRID CONN 7 0 7 0 7 0 7 0 7 0 7 0 7 0 7 0 0 0 0	(MW) AVAIL IECTED (GC) 0 0 0 0 0 0 0 0 0 0	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
GPP 1 GPP 2 GPP 2 GPC	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(MW) ECTED (GC) 0 0 0 0 0 0 0 0 0 0 0	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(MW) AVAIL ECTED (GC) 0 0 0 0 0 0 0 0 0 0 0 0	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00	(MW) AVAIL IECTED (GC) 0 0 0 0 0 0 0 0	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0.00 0.00	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00 0.00	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS GPP 1 GPP 2 GPP 2 GPP 2 GC ADD ENTRY TOTAL RATED CAPACITY(MW): TOTAL AVAILABLE CAPACITY(MW): TOTAL GENERATION CAPACITY(MWh): REMARKS:	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00 0.00	(MW) AVAIL IECTED (GC) 0 0 0 0 0 0 0 0 0 0 0	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00 0.00	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00 0.00	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00 0.00	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00 0.00	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00 0.00	(MW)	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
GPP 1 GPP 2 GPP 2 GPP 2 GPP 2 GC ADD ENTRY TOTAL RATED CAPACITY(MW): TOTAL AVAILABLE CAPACITY(MW): TOTAL GENERATION CAPACITY(MWh): ACTION REMARKS: SAVE TO EDIT LATER	CAP RATED GRID CONN CON CON CON CON CON CON CON CON CON	(MW) AVAIL IECTED (GC) 0 0 0 0 0 0 0 0	PLANNED GENERATION (MWh) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
POWER PLANTS GPP 1 GPP 2 GPP 2 GC ADD ENTRY TOTAL RATED CAPACITY(MW): TOTAL RATED CAPACITY(MW): TOTAL AVAILABLE CAPACITY(MW): TOTAL AVAILABLE CAPACITY(MW): TOTAL GENERATION CAPACITY(MW): TOTAL GENERATION CAPACITY(MWb): ACTION SAVE TO EDIT LATER SAVE TO EDIT LATER SAVE TO EDIT LATER	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(MW) AVAIL IECTED (GC) 0 0 0 0 0 0 0 0 0 0 0 0 0	PLANNED GENERATION (MWh) 0
POWER PLANTS GPP 1 GPP 2 GPP 2 GP 2 GC ADD ENTRY TOTAL RATED CAPACITY(MW): TOTAL GENERATION CAPACITY(MW): TOTAL GENERATION CAPACITY(MWb): ACTION SAVE TO EDIT LATER SAVE TO EDIT LATER	CAP RATED GRID CONN 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(MW) AVAIL IECTED (GC) 0 0 0 0 0 0 0 0 0 0 0 0 0	PLANNED GENERATION (MWh) 0

CALENDAR VIEW:	My Calendar 🔹	ΑCTIVITY	TYPE: Events		YEAR: 2020	•
					ADD EVE	NTS/TO DO
Today Back Next		February	2020		Month Week	Day Agenda
SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	29	30	31	01
02	03	04	05	06	07	08
09	10	11	12	13	14	1:
16	17	18	19	20	21	2
23	24	25	26	27 Notern til	28 Inch. Meeting	29



Timeline



Required Manpower

- Backend Developers
- Frontend Developer
- QA Tester
- Data Center Specialist (Infra and Database Connectivity)

Technology Stacks

- Frontend Stacks: HTML/CSS, Vue Framework
- Backend Stack: NodeJS
- Database Stack: MySQL
- Architecture: Microservice (Non-interdependent Architecture)

Solution Dev't Team Structure





REMB	DOELFO	DOE VFO	DOE MFO
Supply and Installation of Main Data Server	2 Laptops for encoding of RE date	2 Laptops for encoding of RE data	2 Loptops for encoding of RE
1 LED/LCD data display 1 TV Wall Mount Bracket Others: 2 – 8TB HDD 2 – 42U Cabinet Rack 2 – Rack Mountable UPS	1 LED/LCD data display 1 IV Wall Mount Bracket	1 LED/LCD data display 1 TV Wall MountBracket	1 LED/LCD data display 1 V Wall Mount Bracket

REMB Website