Section 6: Employer's Requirements

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1. Scope of Supply of Plant and Services

Introduction

Energy Transition Project (ETP) under the Pacific Renewable Energy Investment Facility (49450-040: RMI) supports the overall objective of improving energy delivery in the RMI as well as extending support for the long-term energy transition through infrastructure development, policy support, and capacity building. The impact of the project will be energy security for the Marshall Islands improved. The project outcome is reliable electricity distribution and clean energy deployment in the RMI strengthened. The ETP has following outputs:

Output 1: Climate resilient energy distribution systems upgraded. By 2029, a new switching substation with two 20 megavolt ampere-capacity isolation transformers, battery energy storage system and capacitors, about 2 kilometers of overhead and underground electricity distribution lines, including looping of existing feeders, a distribution control system, and about 2,750 electricity meters would be procured and installed for Majuro in line with the recommendations of the IRRP and MEC's business plan.

Output 2: Low-carbon energy and productive energy use installations in the Marshall Islands completed. By 2029, at least two commercially proven technologies for about 50 kilowatts of marine and wind energy will be deployed at small scale in two identified locations in Laura and Arno to demonstrate diversified small scale renewable technologies relevant for the Marshall Islands. These installations will support detailed onsite resource assessments and further scale up renewable energy. The productive energy use includes applications for transport, water, and agriculture. This output will be coordinated with a program to train and build capacity for at least 20 members in the communities, including 50% women in Laura and Arno, to enhance knowledge of renewable energy and productive energy applications.

Output 3: Capacity building, institutional strengthening, and climate resilience for the Marshall Islands supported. By 2029, the capacity at MEC to monitor and maintain infrastructure assets, improve operational efficiency, and periodically update tariffs to reflect MEC's underlying costs will be increased. Support will include coordination on marine energy planning, investments for productive energy use, including contracting and building capacity for businesses led by women, updates to the IRRP, and expansion of MEC's internship program.

The project for new switching station (sub-station) is covered under the Output 1. The new switching station will enhance MEC's ability to cater to increasing demand, create more feeders, install step-up/isolating transformers and provide redundancy in switchgear for increased reliability.

About Marshalls Energy Company

Electricity in the Marshall Islands is mainly provided by two utilities – the Marshalls Energy Company (MEC) and the Kwajalein Atoll Joint Utilities Resources (KAJUR). The MEC, established in 1984 as a government-owned utility, generates and distributes electricity in Majuro, Jaluit, and Wotje atolls. MEC also provides management and technical assistance and oversight to KAJUR.

MEC operates six power plants on five islands and provides support to smaller power plants on three other islands. In Majuro, MEC operates two power plants (Power Station 1 – PS1 and Power Station 2 – PS2) with a total installed capacity of 22.8 MW. However, over the years the engines have de-rated, or gone out of service, reducing the available capacity to between 15.6 MW down to 10.3 MW on any given day. Currently MEC operates three diesel engines G1, G2, G5 in PS1 and two diesel engines G6, G7 in PS 2. Other generators in PS1 are out of service. In addition to diesel generation, MEC has about 0.9 MW of grid-connected solar PV, some of which is currently out of service. The total annual electricity generation in Majuro is about 64 GWh with a system average peak load of 9.3 MW. The generators are connected through two incoming lines to the substation (SS) busbar at 13.8 kV.

The WB supported Sustainable Energy Development Project (SEDeP) project, currently underway, includes the replacement of generation units G3 to G4 in PS1 with two new units of 2.3 MW (720 rpm) Prime Rating each. These units will come with associated auxiliary systems and medium and low voltage electrical system including switchgear, motor control center, DC systems and batteries. The PS1 building will also be rebuilt. Generating units G1, G2 and G5 are expected to be replaced with support from other donors with capacities similar to those of the new G3 and G4 units. The SEDeP project also includes the installation of two 1.8 MW prime rated gensets (1,800 rpm) each to provide support during construction of the PS1. This project also includes the installation of approximately 4.5 MWp of solar

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PV of which 2.6 MW will be floating solar and remaining on the rooftops of schools and new sports facility. Battery energy storage system (BESS) of 2 MWh is also planned under the project. Renewable energy projects are also being planned with ADB and JICA support. MEC has also installed 5MW of rental generators from Aggreko to meet demand while G3 and G4 are replaced.

Electricity is delivered to customers on Majuro by a distribution network consisting of three 13.8 kV feeders in a 4-wire overhead configuration, including a grounded system neutral. A small part of the network is at 4.16 kV. Feeder 1 starts from the MEC power station and goes to the Laura end of Majuro Island passing through the airport. Feeder 2 serves the other side of Majuro atoll and connects to Ejit Island. Feeder 3 serves more critical installations, such as the capitol building, hospitals, a government-owned hotel (Marshall Islands Resort), schools, other government establishments and the Delap backroad. The low voltage (LV) network consists of 480YV/277V or 208YV/120V three-phase and 240V/120V single-phase network. MEC Power system is shown schematically in Annex 1 MEC Power system – Overview.

MEC serves around 6000 customers in Majuro, of which 83% are on a pre-payment system. Most of the pre-payment customers are residential and small commercial. The remaining 17% of customers are on a post-payment system and comprise larger residential, most commercial, and all government customers.

Project Objectives

The capacity and space at the switching station at the power station is limited. This does not allow for installation of step-up transformer/isolation transformer for the generators and creation of additional feeders for distributing or connecting new loads such as Majuro Port and Fist Processing Plant. The switching station and the related switchgear needs to be designed to meet the current and future requirement.

Scope and Specifications

The new switching station scope includes following sub-components

- 1. Construction of new sub-station building
- 2. Design, procurement, installation and commissioning of sub-station switchgear, with auxiliary systems like Battery AC/DC
- 3. Changeover from existing switching station to the new one
- 4. Design, procurement, installation and commissioning of MV and LV Power Cables
- 5. Procurement and installation of a 500kW X2 hr BESS at switching station
- 6. Design, procurement, installation and commissioning of Isolating transformers (2X20MVA), including transformer foundations and firewall.
- 7. Design, procurement, installation and commissioning of Relays and Communication Network for protection System

The scope of work and specifications for items 1 to 4 are included in Annex I: New Switching Station (sub-station) Scope and Specifications and Annex VI Battery & AC/DC Boards and Annex VII: MV, LV Power Cable

The scope and specification for item 5 is included in Annex II: Battery Energy Storage System (BESS)

The scope and specifications for item 6 is included in Annex III: Isolating Transformers.

The project activity is included in Annex IV: Activity Schedule

The scope and specifications for item 7 is included in **Annex V: Relays and Communication Network for protection System.** The requirements in Annex V apply to sub-station, isolating transform and the BESS system.

2. Specifications (including Project Signage Requirements)

Notes

To ensure that project information is visible to the public during the execution of works under the project and that there is a precise acknowledgment of the funding source, Employer's team preparing the project signage requirements at site should ensure to follow Country's regulations on the display of project signage at site, where available. These requirements will be reviewed and may be adjusted based on due diligence conducted during project processing, including when projects are co-financed among others.

If the applicable Law does not have such regulations, ADB requirements shall be followed. Employer should seek Project Manager support in defining site-specific requirements such as visibility and use of materials etc. It is responsibility of the Contractor to comply with these requirements and the Project Manager shall ensure its compliance during contract execution and include information in progress reports.

Below is a sample text provided for guidance and may be modified as per the project specific requirements.

- 1. The Contractor is responsible for the design, supply and installation of the project information signage. The signage shall provide relevant information to the public about the project, including the proper designation of the project, the Employer, the Contractor and the Bank.
- 2. For this purpose, one or several sign boards shall be installed at the Site as soon as practicable after the Commencement Date and shall remain in place at all times until Completion of the Facilities. If sign board(s) is(are) damaged or becomes unreadable during this period, it shall be promptly replaced by the Contractor at the Contractor's cost.
- 3. The sign board design shall be submitted by the Contractor to the Project Manager for approval in accordance with Sub-Clause 20.3 [Approval/Review of Technical Documents by Project Manager]. Unless otherwise required under the applicable Laws, the sign board design should comply with the following:
 - a) General
 - The number and locations of sign board(s)
 - b) Content
 - Country's flag/logo
 - Project and Contract title
 - Accepted Contract Amount
 - Time for Completion
 - Bank's name and logo (in accordance with Branding Tool Kit Visual Identity guidelines of the Asian Development Bank and, as the case may be, the other financiers' requirements)
 - Employer's name
 - Contractor's name
 - Project Manager's name
 - Complaint handling contact information (email and/ or phone number)
 - c) Design
 - The General layout including sample colors: to be proposed by the Contractor
 - Dimensions: minimum of 2.5 Meters X 2.5 Meters
 - Font size and type: they should be such as to ensure that the content shall be visible from a distance.
 - Language of the signage: national and/or local language and English
 - Material: the sign board(s) shall be made of a material that shall be weatherproof and appropriate to withstand the whole execution period until taking-over of the Works
- 4. No other signage is allowed except with the approval of the Project Manager. The Contractor shall not post, nor display any sign or item that could provide misleading information about the project. No national symbols or flags other than those of the Country may be displayed without the express approval of the Project Manager.

3. Environmental, Health and Safety Management Requirement

Refer to Initial Environmental Examination (IEE) for the Project including the Environmental Management Plan 49450-040: Energy Transition Project

4. Drawings

Refer to Annexes I,II III, V,VI,VII.

5. Supplementary Information

None.

6. Certificates

6.1 Form of Completion Certificate

Date: Certificate No.:
Contificate No.
Certificate No.:
To: [insert name and address of contractor]
Dear Ladies and/or Gentlemen,
Pursuant to GCC Clause 24 (Completion of the Facilities) of the General Conditions of the Contract entered into between yourselves and the Employer dated [insert date], relating to the [brief description of the Facilities], we hereby notify you that the following part(s) of the Facilities was (were) complete on the date specified below, and that, in accordance with the terms of the Contract, the Employer hereby takes over the said part(s) of the Facilities, together with the responsibility for care and custody and the risk of loss thereof on the date mentioned below.
1. Description of the Facilities or part thereof: [description]
2. Date of Completion: [date]
However, you are required to complete the outstanding items listed in the attachment hereto as soon as practicable.
This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.
Very truly yours,
[Signature]
Project Manager

6.2 Form of Operational Acceptance Certificate

Contract: [insert name of contract and contract identification details]
Date:
Certificate No.:
To: [insert name and address of contractor]
Pursuant to GCC Subclause 25.3 (Operational Acceptance) of the General Conditions of the Contract entered into between yourselves and the Employer dated [date], relating to the [brief description of the facilities], we hereby notify you that the Functional Guarantees of the following part(s) of the Facilities were satisfactorily attained on the date specified below.
1. Description of the Facilities or part thereof: [description]
2. Date of Operational Acceptance: [date]
This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.
Very truly yours,
[Signature]
Project Manager

7. Change Orders

7.1 **Change Order Procedure**

- 7.1.1 General
- 7.1.2 Change Order Log
- 7.1.3 References for Changes

7.2. **Change Order Forms**

- 7.2.1
- Request for Change Proposal Estimate for Change Proposal 7.2.2
- 7.2.3 Acceptance of Estimate
- 7.2.4 Change Proposal7.2.5 Change Order
- 7.2.6 Pending Agreement Change Order
- 7.2.7 Application for Change Proposal

7.1. Change Order Procedure

7.1.1 General

This section provides samples of procedures and forms for implementing changes in the Facilities during the performance of the Contract in accordance with GCC Clause 39 (Change in the Facilities) of the General Conditions.

7.1.2 Change Order Log

The Contractor shall keep an up-to-date Change Order Log to show the current status of Requests for Change and Changes authorized or pending. Entries of the Changes in the Change Order Log shall be made to ensure that the log is up-to-date. The Contractor shall attach a copy of the current Change Order Log in the monthly progress report to be submitted to the Employer.

7.1.3 References for Changes

- (1) Request for Change as referred to in GCC Clause 39 shall be serially numbered CR-X-nnn.
- (2) Estimate for Change Proposal as referred to in GCC Clause 39 shall be serially numbered CN-X-nnn.
- (3) Acceptance of Estimate as referred to in GCC Clause 39 shall be serially numbered CA-Xnnn.
- (4) Change Proposal as referred to in GCC Clause 39 shall be serially numbered CP-X-nnn.
- (5) Change Order as referred to in GCC Clause 39 shall be serially numbered CO-X-nnn.

Note

(a) Requests for Change issued from the Employer's Home Office and the Site representatives of the Employer shall have the following respective references:

Home Office CR-H-nnn Site CR-S-nnn

(b) The above number "nnn" is the same for Request for Change, Estimate for Change Proposal, Acceptance of Estimate, Change Proposal and Change Order.

7.2 Change Order Forms

7.2.1 Request for Change Proposal Form

To: [Contractor's name and address] Date:

Attention: [Name and title]

Dear Ladies and/or Gentlemen:

Contract Name: [Contract name]
Contract Number: [Contract number]

With reference to the captioned Contract, you are requested to prepare and submit a Change Proposal for the Change noted below in accordance with the following instructions within [number] days of the date of this letter [or on or before (date)].

[Employer's letterhead]

- 1. Title of Change: [Title]
- 2. Change Request No./Rev.: [Number]
- 3. Originator of Change:

Employer: [Name]

Contractor (by Application for Change Proposal No. [Number Refer to Annex 6.2.7])

- 4. Brief Description of Change: [Description]
- 5. Facilities and/or Item No. of equipment related to the requested Change: [Description]
- 6. Reference drawings and/or technical documents for the request of Change: Drawing No./Document No. Description
- 7. Detailed conditions or special requirements on the requested Change: [Description]
- 8. General Terms and Conditions:
 - (a) Please submit your estimate showing what effect the requested Change will have on the Contract Price.
 - (b) Your estimate shall include your claim for the additional time, if any, for completing the requested Change.
 - (c) If you have any opinion that is critical to the adoption of the requested Change in connection with the conformability to the other provisions of the Contract or the safety of the Plant or Facilities, please inform us in your proposal of revised provisions.
 - (d) Any increase or decrease in the work of the Contractor relating to the services of its personnel shall be calculated.
 - (e) You shall not proceed with the execution of the work for the requested Change until we have accepted and confirmed the amount and nature in writing.

[Employer's name]
[Signature]
[Name of signatory]
[Title of signatory]

7.2.2 Estimate for Change Proposal Form

				[Contractor's	letterhead]		
To: [Emplo	oyer's	name and address]			Date:	
Atten	tion:	[Name	e and title]				
			[Contract name] : [Contract number]				
Dear	Ladie	s and/	or Gentlemen:				
to pre Cond	epare f	the be . We	low-referenced Chang acknowledge that y	ge Proposal in ac our agreement	ccordance w to the cost	used to notify you of the vith GCC Subclause 39 tof preparing the Ch ating the cost for chang	9.2.1 of the General nange Proposal, in
1.	Title	of Cha	ange: [Title]				
2.				ımber]			
3.							
4.			Impact of Change: [
5.					rt costs whic	h shall be in the currencie	s of the contract 1
	(a)		neering		, , , , , , , , , , , , , , , , , , , ,	(Amount)	,
		(i)	Engineer	hours (hrs) x	rate/hr =		
		(ii)	Draftsperson Sub-total Total Engineering C	hrs	_ rate/hr =		
	(b)	Othe	r Cost				
		Total	Cost (a) + (b)				
[Sigr [Nan	nature ne of si	r's name] ignatory	·]				

7.2.3 Acceptance of Estimate Form

[Employer's letterhead]

To: [Contractor's name and address] Date:

Attention: [Name and title]

Contract Name: [Contract name]

Contract Number: [Contract number]

We hereby accept your Estimate for Change Proposal and agree that you should proceed with the preparation of the Change Proposal.

1. Title of Change: [Title]

Dear Ladies and/or Gentlemen:

- 2. Change Request No./Rev.: [Request number/revision]
- 3. Estimate for Change Proposal No./Rev.: [Proposal number/revision]
- 4. Acceptance of Estimate No./Rev.: [Estimate number/revision]
- 5. Brief Description of Change: [Description]
- 6. Other Terms and Conditions: In the event that we decide not to order the Change accepted, you shall be entitled to compensation for the cost of preparing the Change Proposal described in your Estimate for Change Proposal mentioned in para. 3 above in accordance with GCC Clause 39 of the General Conditions.

[Employer's name]
[Signature]
[Name of signatory]
[Title of signatory]

7.2.4 Change Proposal Form

	[Contractor's letterhead]			
To: [Emplo	yer's name and address]		Date:
Atten	tion: [Name and title]		
		ame: [Contract name] Imber: [Contract number]		
Dear	Ladies	s and/or Gentlemen:		
In res	ponse	to your Request for Change Proposal No	. [Number], we	hereby submit our proposal as follows:
1.	Title o	of Change: [Name]		
2.	Chan	ge Proposal No./Rev.: [Proposal number / I	revision]	
3.	Origir	nator of Change: Employer:[<i>Name</i>]/ Co	ntractor: [Nam	e]
4.	Brief	Description of Change: [Description]		
5.	Reas	ons for Change: [Reason]		
6.	Facili	ties and/or Item No. of Equipment related	to the requeste	d Change: [Facilities]
7.		rence drawings and/or technical documen wing/Document No./Description]	ts for the reque	sted Change:
8.	Estim	ate of increase/decrease to the Contract	Price resulting f	rom the Change Proposal:
			_	Amount
			[insert amounts	in the currencies of the Contract]
	(a)	Direct material		
	(b)	Major construction equipment		
	(c)	Direct field labor (Total hrs)		
	(d)	Subcontracts		
	(e)	Indirect material and labor		
	(f)	Site supervision		
	(g)	Head office technical staff salaries		
		Process engineer hrs @ Project engineer hrs @		
		Equipment engineer hrs @	rate/hr	
		Procurement hrs @ Draftsperson hrs @	rate/hr rate/hr	
		Totalhrs		
	(h)	Extraordinary costs (computer, travel, etc	p.)	
	(i)	Fee for general administration, % of Ite	ms	
	(j)	Taxes and customs duties		
	Total	lump sum cost of Change Proposal	[Sum o	f items (a) to (j)]
	Cost	to prepare Estimate for Change Proposal	[Amour	nt payable if Change is not accepted]
9.	Additi	onal time for Completion required due to	Change Propos	sal
10.	Effect	t on the Functional Guarantees		
11.	Effect	on the other terms and conditions of the	Contract	
12.	Validi	ty of this Proposal: within [Number] days	after receipt of	this Proposal by the Employer
13.	Other	terms and conditions of this Change Pro	posal:	
	(a)	You are requested to notify us of your ac Change Proposal within [Number] days for		

- (b) The amount of any increase and/or decrease shall be taken into account in the adjustment of the Contract Price.
- (c) Contractor's cost for preparation of this Change Proposal: [. . . . insert amount. This cost shall be reimbursed by the employer in case of employer's withdrawal or rejection of this Change Proposal without default of the contractor in accordance with GCC Clause 39 of the General Conditions]

[Contractor's name]
[Signature]
[Name of signatory]
[Title of signatory]

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7.2.5 Change Order Form

[Employer's letterhead]				
To: <i>[</i>	Contractor's name and address] Date:			
Atten	tion: [Name and title]			
	ract Name: [Contract name] ract Number: [Contract number]			
Dear	Ladies and/or Gentlemen:			
to adj	approve the Change Order for the work specified in the Change Proposal (No. [number]), and agree just the Contract Price, Time for Completion, and/or other conditions of the Contract in accordance with Clause 39 of the General Conditions.			
1.	Title of Change: [Name]			
2.	Change Request No./Rev.: [Request number / revision]			
3.	Change Order No./Rev.: [Order number / revision]			
4.	Originator of Change: Employer: [Name] / Contractor: [Name]			
5.	Authorized Price: Ref. No.: [Number] Date: [Date] Foreign currency portion [Amount] plus Local currency portion [Amount]			
6.	Adjustment of Time for Completion			
	None Increase [Number] days Decrease [Number] days			
7.	Other effects, if any			
Autho	orized by: Date: Employer			
Acce	pted by: Date: Contractor			

7.2.6 Pending Agreement Change Order Form

[Employer's letterhead] To: [Contractor's name and address] Date: Attention: [Name and title] Contract Name: [Contract name] Contract Number: [Contract number] Dear Ladies and/or Gentlemen: We instruct you to carry out the work in the Change Order detailed below in accordance with GCC Clause 39 of the General Conditions. 1. Title of Change: [Name] 2. Employer's Request for Change Proposal No./Rev.: [number/revision] dated: [date] 3. Contractor's Change Proposal No./Rev.: [number / revision] dated: [date] 4. Brief Description of Change: [Description] 5. Facilities and/or Item No. of equipment related to the requested Change: [Facilities] 6. Reference Drawings and/or technical documents for the requested Change: [Drawing / Document No. / Description] 7. Adjustment of Time for Completion: 8. Other change in the Contract terms: 9. Other terms and conditions: [Employer's name] [Signature] [Name of signatory] [Title of signatory]

7.2.7 Application for Change Proposal Form

Date: To: [Employer's name and address] Attention: [Name and title] Contract Name: [Contract name] Contract Number: [Contract number] Dear Ladies and/or Gentlemen: We hereby propose that the work mentioned below be treated as a Change in the Facilities. 1. Title of Change: [Name] Application for Change Proposal No./Rev.: [Number / revision]dated: [Date] 2. 3. Brief Description of Change: [Description] Reasons for Change: 4. 5. Order of Magnitude Estimation (amount in the currencies of the Contract): [Amount] Scheduled Impact of Change: 6. 7. Effect on Functional Guarantees, if any: Appendix: 8. [Contractor's name] [Signature] [Name of signatory] [Title of signatory]

[Contractor's letterhead]

8. Personnel Requirements

Using Form PER - 1 and PER - 2 in Section 4 (Bidding Forms), the Bidder must demonstrate that it has personnel who meet the following requirements:

No.	Position	Relevant academic qualifications	Total Work Experience [years]	Experience In Similar Work [years]
1	Project Manager	Bachelors in relevant field, Masters and higher qualifications preferred	15	5, SIDS experience preferred
2	Quality Assurance Manager	Bachelors in relevant field, Masters and higher qualifications preferred	10	3, SIDS experience preferred
3	Environmental Expert	Bachelors in relevant field	10	3, SIDS experience preferred
4	Social Safeguard Expert	Bachelors in relevant field	10	3, SIDS experience preferred
5	Health and Safety Expert	Bachelors in relevant field	10	3, SIDS experience preferred

Using Form EXP-6 in Section 4 (Bidding Forms), the Bidder must demonstrate that it has EHS personnel who meet the following requirements:

Key Personnel as determined by the EMP and other safeguard management plans

	Item No.	Position/specialization	Relevant academic qualifications	Minimum years of relevant work experience	Minimum time on-site (%FTE)
Ī	1	Environmental Expert	Bachelors in relevant field	10	40%
	2	Social Safeguard Expert	Bachelors in relevant field	10	30%
	3	Health and Safety Expert	Bachelors in relevant field	10	50%

9. Equipment Requirements

Using Form EQU in Section 4 (Bidding Forms), the Bidder must demonstrate that it has the key equipment listed below:

No.	Equipment Type and Characteristics	Minimum Number Required
1		
2		
3		
4		
5		