



Request for Information For

(SUPPLY OF BATTERY AND SOLAR PANEL FOR TELECOMMUNICATIONS PROJECT)

**Reference No. :
SKMM/USPD/UPD/190_JEN2/RFI(J2/Power_Solution/2026)**

**Issue Date: 31 March 2026
Response Date: 30 April 2026 by 3.00 PM**

SECTION I - GENERAL INFORMATION

A. Purpose

1. The purpose of this Request for Information (RFI) is to gather market information and identify qualified suppliers capable of providing suitable battery and solar panel solutions for telecommunications projects in Malaysia. This RFI is issued solely for information-gathering purposes and does not constitute a commitment by the Malaysian Communications and Multimedia Commission (MCMC) to issue a Request for Proposals (RFP), invite bids, award a contract, or compensate any costs incurred in the preparation of a responses. MCMC requires all responding suppliers to carefully review this RFI and submit accurate, complete, and reliable information as part of their response.
2. Any information received in response to this RFI will assist MCMC's project team in finalising the scope of work and requirements which may be used at a future date in the issuance of a Request for Proposals (RFP). Submitting a response to this RFI is not a guarantee in any way that a supplier will be selected for any subsequent RFP, nor does it preclude any supplier from responding to future procurement opportunities.

B. Contact Details

The point of contact for any inquiries can be referred to:

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C. Pertinent Dates:

Final questions prior to submission before **7 April 2026, 3:00PM**

Submission Deadline: **30 April 2026, 3:00PM**

D. Scope

This RFI seeks to gather comprehensive information from interested industry participants on available power solutions including battery and solar panel systems, suitable for telecommunications projects in Malaysia. The scope includes off-grid and hybrid power systems intended to support telecommunications infrastructure such as, but not limited to, base stations, network facilities, and remote sites.

Industry participants are requested to provide information on technical specifications, system capacity, scalability, reliability, redundancy features, and compliance with relevant telecommunications, electrical, and safety standards. The scope of this RFI also encompasses renewable energy solutions such as solar photovoltaic (PV) systems, energy storage technologies, backup power solutions including generators, and integrated energy or power management systems.

In addition, industry participants should include information on deployment requirements, operation and maintenance considerations, environmental operating conditions, lifecycle performance, and indicative commercial aspects including budgetary pricing and warranty terms.

Information gathered through this RFI will be used solely for assessment, benchmarking, and planning purposes and shall not constitute commitment by MCMC to procure or appoint any solution or vendor.

E. Information Requested from Suppliers

Suppliers are to respond to the questions listed in Section III of this RFI. Suppliers are encouraged to recommend changes to the project if it is determined, based on their experience, that there is a better approach. MCMC is seeking best practices in this area.

Suppliers are to make reference to the document appended in Appendix 1 of this RFI.

F. Supplier Presentations

MCMC may request suppliers to provide a presentation described in this RFI. All costs associated with such presentations will be borne by the supplier. Promotional items shall not be provided at these presentations.

G. Confidentiality and RFI Ownership

1. This RFI is confidential and MCMC reserves the right to recall the RFI in its entirety or in part. Suppliers agree that they will not duplicate, distribute or otherwise disseminate or make available this document or the information contained in it without the express written consent of MCMC's issuing office.
2. Suppliers shall not include or reference this RFI in any publicity without prior written approval from MCMC, which, if granted, shall be granted by the issuing office. Suppliers must accept all of the foregoing terms and conditions without exception. All responses to the RFI will become the property of MCMC and will not be returned to the suppliers.

3. Any request for further information beyond what is contained in this RFI may be subject to the execution of a Non-Disclosure Agreement (NDA) to be signed and stamped prior to disclosure. Any cost incurred in connection with the NDA, including stamp duty charges, shall be fully borne by the receiving party.

H. Disclosure of Proposal Contents

1. Cost and price information provided in proposals will be kept confidential and will not be revealed or discussed with competitors, except to the extent required by law.
2. All other material submitted becomes the property of MCMC and may be returned only at the MCMC's option. Proposals submitted may be reviewed and evaluated by any person other than competing bidders at the discretion of MCMC.
3. MCMC has the right to use any or all ideas presented in any reply to the RFI. Where confidential or proprietary information is required, or should the vendor deem it necessary to submit such matter, mark each page/section in large bold type (**PROPRIETARY INFORMATION**).

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SECTION II – DESCRIPTION OF THE ORGANISATION

MCMC is a statutory body that is established by the Malaysian Communications and Multimedia Commission Act 1998 [Act 589] with powers to supervise and regulate the communications and multimedia activities in Malaysia, and to enforce the communications and multimedia laws of Malaysia.

MCMC is also mandated to regulate the postal services industry pursuant to the Postal Services Act 2012 and the digital signature framework under the Digital Signature Act 1997.

For more information on MCMC, please refer to <http://www.mcmc.gov.my>

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SECTION III - GENERAL REQUIREMENTS

A. General Supplier Information

Suppliers are invited to submit a response containing, at a minimum, the following information:

1. Company profile including SSM Registration – relevant registrations and certifications (e.g. registration with the Ministry of Finance, SIRIM, international standard compliance) showing authorization to supply the equipment.
2. Company brochure/literature if available.
3. Brief description of past experience providing similar services/supplies including project's names and clients.

B. Project Overview

The project involves the installation of network facilities and the deployment of network services to extend mobile broadband access to remote and underserved areas across Malaysia, where access to grid electricity is limited or unavailable, in support of the JENDELA 2 project. Further details of the project can be found at the following link:

1) Public Cellular Services :

https://www.mcmc.gov.my/skmmgovmy/media/General/pdf2/1-RFP-Document_JENDELA2_PCS.pdf

2) Broadband Access Services :

https://www.mcmc.gov.my/skmmgovmy/media/General/pdf2/2-RFP-Document_JENDELA2_BWA.pdf

The project will incorporate a renewable energy power system, where grid access is unavailable, comprising solar photovoltaic (PV) panels, battery storage, power management equipment, and telecommunications facilities. These components will form an integrated hybrid power system designed to support twenty-four (24) hours of continuous operation of the Base Transceiver Station (BTS) and associated communication infrastructure, including Wi-Fi services via satellite backhaul.

C. Technical requirements

1. Battery

1.1 Suppliers to propose battery specifications and standards that are suitable for the telecommunications projects as follows:

Off - Grid

- a. Telecommunications towers in various heights (45/60/90 meter) providing 4G and 5G services (up to 6-Way Multi Operator Core Network ("MOCN") sharing capabilities), with the available backhaul depending on the site conditions (fibre/microwave/satellite);
- b. Small cell providing 4G and 5G services (up to 6-Way MOCN sharing capabilities), with the available backhaul depending on the site conditions (fibre/microwave/satellite); and
- c. Wi-Fi services via satellite backhaul.

1.2 Submissions shall include the manufacturer's technical datasheets, including but not limited to, the following:

No.	Description	Unit	Supplier to Fill
1.0	Make/Country of Origin		
2.0	Type/Model		
3.0	Battery Cell Information		
	• Cell Chemistry		
	• Cell Configuration		
	• Cell Capacity	Ah	
	• Nominal Voltage (per cell)	V	
	• Cell Manufacturer		
4.0	Battery Module Data		
	• Nominal Voltage	V	
	• Nominal Capacity	Ah	
	• Energy (Nominal)	kWh	

No.	Description	Unit	Supplier to Fill
	• Usable Energy	kWh	
	• Depth of Discharge (DoD)	%	
	• Cycle Life (Rated DoD)	cycles	
	• Round Trip Efficiency	%	
	• Self-Discharge Rate	%/month	
	• Module Fire Performance		
	• Max. Series Fuse Rating	A	
	• Application Classification		
	• Power Tolerance	W	
5.0	Mechanical Data		
	• Dimensions (L x W x H)	mm	
	• Weight	kg	
	• Enclosure Type / Material		
	• IP Rating		
	• Cooling Method (Air / Liquid / Passive)		
	• Mounting Type (Rack / Cabinet / Containerised)		
6.0	Electrical and Operating Data		
	• Operating Voltage Range	V	
	• Max Continuous Charge Power	kW	
	• Max Continuous Discharge Power	kW	
	• Peak Power (10 sec)	kW	
	• Max Charge Current	A	
	• Max Discharge Current	A	
	• Operating Temperature	°C	
	• Storage temperature Range	°C	

Table 1: Technical Datasheet for battery

1.3 Suppliers shall include details of the battery warranty, including any related information on warranty coverage and replacement.

1.4 The battery shall provide uninterrupted power to the equipment to ensure 24-hour service.

2. Solar Panel

2.1 Suppliers to propose solar panel specifications and standards that are suitable for the telecommunications projects as follows:

Off - Grid

- a. Telecommunications towers in various heights (45/60/90 meter) providing 4G and 5G services (up to 6 Way MOCN sharing capabilities), with the available backhaul depending on the site conditions (fibre/microwave/satellite);
- b. Small cell providing 4G and 5G services (up to 6 Way MOCN sharing capabilities), with the available backhaul depending on the site conditions (fibre/microwave/satellite); and
- c. Wi-Fi services via satellite backhaul.

2.2 Submissions shall include the manufacturer’s technical datasheets, including but not limited to, the following:

No.	Description	Unit	Bidder to Fill
1.0	Make/Country of Origin		
2.0	Type/Model		
3.0	Mechanical Data		
	• Cell Type		
	• Cell Arrangement		
	• Dimensions	mm	
	• Weight	kg	
	• Front Cover	mm	
	• Frame Material		
	• J-Box		

No.	Description	Unit	Bidder to Fill
	• Cable		
	• Connector		
	• Per Pallet	pieces	
	• Per Container (40' HQ)	pieces	
4.0	Electrical Data (STC)		
	• Nominal Max. Power (Pmax)	W	
	• Opt. Operating Voltage (Vmp)	V	
	• Opt. Operating Current (Imp)	A	
	• Open Circuit Voltage (Voc)	V	
	• Short Circuit Current (Isc)	A	
	• Module Efficiency		
	• Operating Temperature	°C	
	• Max. System Voltage	V	
	• Module Fire Performance		
	• Max. Series Fuse Rating	A	
	• Application Classification		
	• Power Tolerance	W	
	• Electrical Data (NOCT)		
5.0	Nominal Max. Power (Pmax)	W	
	• Opt. Operating Voltage (Vmp)	V	
	• Opt. Operating Current (Imp)	A	
	• Open Circuit Voltage (Voc)	V	
	• Short Circuit Current (Isc)	A	
6.0	Temperature Characteristic		
	• Temperature Coefficient (Pmax)		
	• Temperature Coefficient (Voc)		
	• Temperature Coefficient (Isc)		
	• Nominal Operating Cell Temperature		
7.0	Product Certificates		

Table 2: Technical Datasheet for PV Panels

2.3 Suppliers shall include details of the solar panel warranty, including any related information on warranty coverage and replacement.

D. Costing

1. Battery

1.1 Suppliers propose the estimated cost based on the battery specifications provided in Section III (C) paragraph 1.

1.2 The estimated cost should include the CAPEX and monthly OPEX (if any).

1.3 The cost shall consider the locations of the sites as follows:

i. Urban

ii. Sub-urban

iii. Rural and remote areas

1.4 Any other costs that the supplier deems relevant to be included.

2. Solar Panel

2.1 Suppliers propose the estimated cost for the solar panel specifications provided in Section III (C) paragraph 2.

2.2 The estimated cost shall include CAPEX and monthly OPEX (if any).

2.3 The cost shall consider the locations of the sites as follows:

i. Urban

ii. Sub-urban

iii. Rural and remote areas

2.4 Any other costs that the supplier deems relevant to be included.

3. **Installation Timeline**

3.1 Supplier to propose estimated timeline for the installation of the battery and/or solar system.

3.2 The timeline shall consider the locations of the sites as follows:

- i. Urban
- ii. Sub-urban
- iii. Rural and remote areas

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SECTION IV - RESPONSE FORMAT

Responses are to be straightforward, clear, concise and specific to the information requested.

In order for submissions to be considered complete, suppliers must provide the following information:

- a. Response to Section III
- b. Other: any comments, observations or suggestions which may assist MCMC in drafting a procurement solicitation

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APPENDIX 1 – INFORMATION FOR REFERENCE ONLY

SOLAR PHOTOVOLTAIC PANELS

1.1. GENERAL SCOPE OF WORK

The Solar PV Panels Supplier(s) is expected to support the implementation of solar power systems for telecommunication sites at the general scope of work includes, but is not limited to the following:

- a) Technical specification and compliance.
- b) Coordination and support.
- c) Quality Assurance and reporting.

1.2. SUPPLY OF SOLAR PHOTOVOLTAIC PANELS

The Supplier is to:

- a) Provide certified and high-efficiency PV Panels suitable for tropical climate conditions and off-grid applications.
- b) Ensure all panels meet the following specifications and requirements:
 - i. GreenTech Malaysia "MyHijau" labelled
 - ii. Compliance with IEC 61215 and IEC 61730
 - iii. Tier-One manufacturer
 - iv. Each Panel shall not less than 605Wp
 - v. Panel efficiency shall be greater than 21%
 - vi. Supplier with direct sales office and reputable after sales service in Malaysia; and
 - vii. Guarantee product performance, durability, and warranty compliance.

1.3. TECHNICAL DOCUMENTATION AND COMPLIANCE WITH STANDARDS

- 1.3.1. The Supplier is to submit all relevant technical datasheets, certifications, and test reports for the supply of Solar PV Panels.
- 1.3.2. The Solar PV Panels specification shall comply with Malaysian and international standards. The PV Panels should comply with the following relevant certifications as mentioned in the table below.
- 1.3.3. It is the responsibility of the Supplier to notify the Commission in case any of the following certifications/additional test results are not available for the selected Solar PV Panels model.

Subject of Certifications	Certifications
Design qualification and type approval for crystalline silicon PV Panels	IEC/EN 61215
Test for the electrical safety	IEC/EN 61730-2 IEC/EN 61730-1
Salt mist corrosion testing of PV Panels	IEC 61701
Ammonia corrosion testing of PV Panels	IEC 62716
Potential Induced Degradation (PID), applicable for crystalline silicon PV Panels, or independent laboratory test report	IEC TS 62804-1
Quality management system (for manufacturing facility)	ISO 9001
Environmental Management System (for manufacturing facility)	ISO 14001
Concentrator photovoltaic (CPV) modules and assemblies - Design qualification and type approval	IEC 62108
Ammonia corrosion testing of PV Panels	IEC 62716
PV Panels - Transportation testing	IEC 62759
PV Panels - Cyclic (dynamic) mechanical load testing	IEC 62782
Junction boxes for photovoltaic Panels - Safety requirements and tests	IEC 62790
Test methods for the detection of Potential Induced Degradation	IEC 62804
Connectors for DC-application in photovoltaic systems - Safety requirements and tests	IEC 62852

Subject of Certifications	Certifications
Photovoltaic power generating systems - EMC requirements and test methods for power conversion equipment	IEC 62920

1.4. ADDITIONAL INDEPENDENT TESTING

1.4.1. In addition, the following tests should be carried out for the type of PV Panels proposed by an independent laboratory certified to recognised standards and the testing results shall be provided by the Supplier.

(a) Damp heat tests

Malaysia’s climate is highly humid. Damp heat testing should therefore be carried out for all PV Panels type proposed of minimum of 2,000 hours to recognised standards by an independent third party.

(b) Light Induced Degradation (LID)

All PV Panels proposed should be tested for light induced degradation, through repeated flash testing during at least one year of outdoor light exposure to recognised standards by an independent third party.

(c) Light and Elevated Temperature Induced Degradation (LeTID)

The PV Panels with Passivated Emitter Rear Contact (PERC) technology should be tested for light and elevated temperature induced degradation, through up to five rounds of 162 hours at maximum power point (MPP) and at 75°C with a current injection to recognised standards by an independent third party.

1.4.2. The use of a single PV Panels watt class shall be used throughout the Project.

BATTERIES

2.1 GENERAL SCOPE OF WORK

The Battery Supplier will be expected to support the implementation of solar power systems for telecommunication sites. The general scope of work includes, but is not limited to, the following:

- a) Technical documentation and compliance
- b) Coordination and support
- c) Quality Assurance and reporting

2.2 SUPPLY OF BATTERIES

The Supplier is to:

- a) Provide high-performance, deep-cycle battery systems suitable for tropical climate conditions and off-grid telecommunication applications.
- b) Ensure all batteries meet the following specifications and requirements:
 - i. The battery cells must be supplied by a Tier 1 manufacturer;
 - ii. Compliant with IEC 62619 and IEC 62620 standards for stationary lithium-based battery systems;
 - iii. Proven Supplier; with presence in Malaysia; credibility where Interested Suppliers must submit telecommunication project experience and other related projects (either local or international);
 - iv. Preferred technology: Lithium Iron Phosphate (LiFePO₄) batteries;
 - v. Capacity: Preferred capacity size is 200 Ah. Higher capacity will be considered;

- vi. Sized to support full site load for designed autonomy hours for a site at 100% load;
 - vii. Additional +20% buffer for site expansion or load growth;
 - viii. Cycle life: LiFePO₄: ≥4000 cycles @ 80% DoD (minimum 10-year design life);
 - ix. Designed for long cycle life suitable for solar-based charging applications where the Interested Suppliers may submit the catalogue or other relevant documents as proof;
 - x. Integrated digital BMS with:
 - 1. Real-time monitoring of cell voltage, temperature, SOC (state of charge), SOH (state of health);
 - 2. Cell balancing to equalise charge/discharge across cells.
 - 3. Protection against overcharge, deep discharge, short-circuit, and thermal events;
 - 4. Event logging and historical data storage;
 - 5. Communication via MODBUS RTU (RS-485) and/or MODBUS TCP/IP, SNMP, and CANbus, fully compatible with site EMS or rectifier systems; and
 - xi. Supplier with direct sales office and reputable after sales service in Malaysia
- c) Guarantee product performance, durability, and warranty compliance.

2.3 TECHNICAL DOCUMENTATION AND COMPLIANCE WITH STANDARDS

- 2.3.1 The Suppliers is to submit all relevant technical datasheets, certifications and test reports.

2.3.2 The 48V 200Ah 19-inch Battery Pact specification shall comply with international standards for stationary lithium battery systems used in renewable energy applications. The battery system (Lithium Ferrous Phosphate Battery) should comply with the following relevant certifications:

Subject of Certifications	Certifications
Battery Cells	
Performance requirements for secondary lithium cells and batteries for stationary applications	IEC 62620
Transportation of lithium batteries	UN 38.3
Environmental Management System (for manufacturing facility)	ISO 14001
Quality management system (for manufacturing facility)	ISO 9001
Environmental Management System (for manufacturing facility)	ISO 14001
Occupational Health and Safety Management System	ISO 45001
Battery system testing – Vibration, thermal cycling, and mechanical integrity	IEC 60068 Series
Electromagnetic compatibility (EMC) for battery systems	IEC 61000-6-4 / IEC 61000-6-2
Focus on sustainable battery lifecycle management	ITU- T L. 1035
Outline smart energy management strategies to optimise battery performance	ITU- T L. 1382
Guidance on power systems for 4G networks and encourages the integration of energy-efficient lithium batteries	ITU- T L. 1210
Requirements for high-quality lithium batteries in telecom applications and guidelines on how to select the best type battery	ITU- T L. 1221

Subject of Certifications	Certifications
Battery Management System	
Certificate of Compliance to IEC 62619:2022 for the battery management system and associated protection functions in industrial lithium-ion batteries	IEC 62619
Certificate of Compliance to EN ISO 13849-1 for safety-related control functions of the battery management system	EN ISO 13849-1
Certificate of EMC Compliance for the Battery Management System per EN 61000-6-2 / EMC Directive 2014/30/EU	EN 61000-6-2 / EMC Directive 2014/30/EU
UN 38.3 / IEC 62281 Transport Safety Certificate covering BMS-controlled lithium cells/batteries	UN 38.3 / IEC 62281

- 2.3.3 It is the responsibility of the Suppliers to notify the Commission in case any of the above certifications/additional test results are not available for the selected Batteries.
- 2.3.4 All battery modules supplied shall be of the same type and capacity to ensure uniformity in performance and interchangeability.

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