CONFIDENTIAL

Net Energy Metering (NEM) Below 30kWac Application Form

Part 1: INFORMATION

- Submit the application form to the Sarawak Energy Customer Service Counter.
- Application shall comply with the 'Engineering Circular No. 17/2021 – Solar Photovoltaic Installation on Net Energy Metering Scheme'
- For application >30kWac, submit to Distribution Planning and Services team at Menara Sarawak Energy.

Note:
In this form, 'GCPV' refers to Grid-Connected Photovoltaic systems.

sarawak energy

Syarikat SESCO Berhad (200401034422) (672931-A)
A subsidiary of Sarawak Energy Group

For Office Use Only:

Date Received: _____

Time Received: _____

Part 2: CUSTOMER INFORMATION

Salutation: ☐ Mr. ☐ Mrs. ☐ Miss ☐ Others: _____

Applicant Name: _____ IC/Passport/BRN No.: _____

SESCO Contract Account No.: _____ Contact No.: _____

Email Address: _____

Mailing Address: _____

GCPV Installation Address: _____
*Fill in if different from mailing address.

GCPV Installation Site Ownership: ☐ Own ☐ Rental
*Attach the tenant's consent letter if the GCPV installation site is rented.

I hereby authorise the Competent Person as described in PART 3 to act on my behalf to manage my Net Energy Metering (NEM) application.

Signature: Date:

Part 3: COMPETENT ELECTRICAL CONTRACTOR DETAILS

Name: _____ Competency Certification No.: _____

Company Name: _____ Company BRN No.: _____

Email Address: _____ Contact No.: _____

Mailing Address: _____

Part 4: INSTALLER DETAILS

GCPV System will be installed by: ☐ EIU Certified Chargeman L4 (General) ☐ EIU Certified Chargeman L4 (Grid Connected) ☐ EIU Certified Chargeman L4 with Chargeman L1

Name: _____ Competency Certification No.: _____

Email Address: _____ Contact No.: _____

Mailing Address: _____

City: _____ State: _____ Postcode: _____

Part 5: INSTALLATION DETAILS

Voltage at Point of Common Coupling: ☐ Low Voltage (240V or 415V) ☐ High Voltage (11kV or 33kV)

Installation Type (Rooftop): ☐ Commercial ☐ Domestic ☐ Industrial

A) Average Monthly Consumption for Past Three (3)Months: _____ in kWh

B) Installed Solar GCPV Capacity: _____ in kWac

C) Expected Generation Per Month: _____ kWh

*Expected generation per month should not exceed 75% of average monthly consumption.

Part 6: GCPV INSTALLATION TECHNICAL INFORMATION

A) GCPV Solar Panel:

Manufacturer : _____ Model Number : _____

Number of Unit: _____ Power Rating Per Unit : _____ Wp Total Power Rating : _____ kWp

Equipment Class: ☐ Electrical Class II

Product Certification: ☐ IEC 61215 ☐ IEC 61730-1 ☐ IEC 61730-2

B) GCPV Inverter:

Inverter Type: ☐ Single Phase ☐ Three Phase

Manufacturer : _____ Model Number : _____

Number of Unit: _____ Power Rating Per Unit : _____ kWac Total Power Rating : _____ kWac

DC/AC Ratio : _____

Product Certification: ☐ IEC 61000-6-3 ☐ IEC 61000-6-4 ☐ IEC 60364-7-712 ☐ IEC 61000-3-2

Provision of memory storage for GCPV generation and load demand automatically in non-volatile flash memory/cloud for minimum duration of 12 months during actual operation. The stored data shall be for Sarawak Energy operational use only. ☐ Yes

Part 7: INTERCONNECTING EQUIPMENT TECHNICAL INFORMATION

A) GCPV System Disconnecting Switch / Main Switch

DC Side:

Manufacturer : _____ Model Number: _____

Rated Voltage : _____ Vdc Rated Current : _____ Adc

Breaking Current : _____ kA

AC Side:

Manufacturer : _____ Model Number: _____

Rated Voltage : _____ Vac Rated Current : _____ A

Breaking Current : _____ kA

B) Surge Protective Device (SPD)

DC Side:

Manufacturer : _____ Model Number: _____

Product Certification: ☐ MS IEC 61643 -12 Rating : _____

AC Side:

Manufacturer : _____ Model Number: _____

Product Certification: ☐ MS IEC 61643 -12 Rating : _____

Part 8: CHECKLIST SUBMISSION

I have submitted all the information in the checklist as required. ☐ Yes

Part 9: APPLICATION OUTCOME (TO BE FILLED BY SARAWAK ENERGY PLANNING UNIT)

Approved Capacity : _____ kWac

The Application is : ☐ Accepted ☐ Rejected

Accepted by : _____ Signature & Stamp : _____

Designation : _____ Date : _____

Comments : _____

_____

_____

Reminder for Submitter/Contractor/Installer:

*** Please ensure the GCPV system installation is completed within one year period from the acceptance date.**

End of Document

Retail Checklist:
Document check

NET ENERGY METERING (NEM) CHECKLIST FOR APPLICATIONS <30kWac

REF	DESCRIPTIONS	CONTENTS	DECLARED BY SUBMITTER		NOTE
			SUBMITTED & COMPLIED	NOT APPLICABLE	
1-1	Required Forms Submission	NEM Application Form	☐		
		AC01 Form	☐		
1-2	Supporting Documents Submission for record keeping	Letter of Appointment for Contractor	☐		
		• Overall layout plan indicating the rooftop solar panel • Shop drawing showing installation location of the proposed PV meter & inverter • Front view photo of premises (.jpg)	☐		
		Consent letter from building /house owner for installation of solar PV system	☐	☐	Only applicable for rented GCPV installation site/rental property
		Copy of Chargeman L4 Certificate	☐		
		• Copy of EIU Certified GCPV Designer Certificate **or** • Copy of EIU Authorized GCPV Designer Certificate	☐		
		• Copy of EIU Certified Authorized to Test (ATT) Certificate **or** • Copy of EIU Certified Electrical Supervisor (LV Installations & Equipment/Substation) Certificate **or** • Copy of Certified of Competent Electrical Engineer (CEE - LV Installations & Equipment /HV Substation) Certificate **or** • Copy of Certified of Professional Engineer with Practising Certificate (PEPC)	☐		
		Information on past three (3) months consumption (based on billing)	☐		

Retail Checklist:
Declaration by Contractor

NET ENERGY METERING (NEM) CHECKLIST FOR APPLICATIONS <30kWac

REF	DESCRIPTIONS	CONTENTS	DECLARED BY SUBMITTER COMPLIED	NOTE
2-1	Capacity Limit	The maximum capacity of the proposed GCPV shall not exceed **30kWac.**	☐	For capacity limit **>30kWac**, application to be reviewed by Distribution Planning & Services, HQ. For existing three phase housing system must be connected with three phase solar system.
		To submit calculations showing the installed GCPV is below **75%** of average monthly consumption for past (3) months.	☐	
2-2	Metering Scheme	• Comply with the Meter Scheme as specified in Engineering Circular 17/2021 • Looping connection between cut-outs shall be using 16mm^2 Cu. • Distance between PV meter and Sarawak Energy Meter shall not more than 1 meter. Submitter to initiate discussion with Sarawak Energy for alternative solution in the situation if this is not feasible.	☐	

Distribution Checklist:
Declaration by Contractor

NET ENERGY METERING (NEM) CHECKLIST FOR APPLICATIONS <30kWac

REF	DESCRIPTIONS	CONTENTS	DECLARED BY SUBMITTER SUBMITTED & COMPLIED	NOTE
3-1	Supporting Documents Submission	Inverter Specification	☐	Datasheet and technical specifications attached Datasheet model matches PVGIA form
		Electrical Drawing for a connection scheme indicating details of equipment rating and be endorsed by competent personnel as follows: **AC Part Circuit:** • EIU Certified Authorised to Test (ATT) for systems up to 60A **or** • EIU Certified Electrical Supervisor (LV Installations & Equipment/Substation) for systems up to 100A **or** • EIU Certified Competent Electrical Engineer (CEE-LV Installations & Equipment /HV Substation) **or** • BEM Certified Professional Engineer with Practising Certificate (PEPC) **DC Part Circuit:** • EIU Certified GCPV Designer **or** • EIU Authorized GCPV Designer Refer to 4-2 for the Technical Requirements.	☐	
		Calculation on Estimated Monthly Energy Generation of PV System	☐	
4-1	Types of Installation Allowed	Rooftop Installation	☐	Only rooftop installation is allowed.
4-2	Connection Scheme	Direct Connection	☐	To submit schematic diagram with details of equipment rating.
		Full compliance with MS 1837: 2018.	☐	

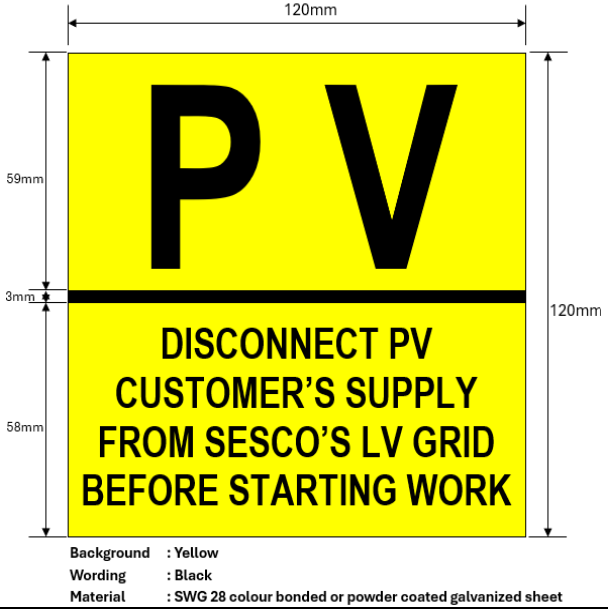
NET ENERGY METERING (NEM) CHECKLIST FOR APPLICATIONS <30kWac

REF	DESCRIPTIONS	CONTENTS	DECLARED BY SUBMITTER SUBMITTED & COMPLIED	NOTE
4-3	Energy Storage System	No connection of Energy Storage	☐	Connection of Energy Storage is not allowed for GCPV System.
4-4	Continuous Operating Range	The design shall meet the continuous operating range as per the State Grid Code.	☐	Voltage Excursion: +5% and -10% (Normal operating) ±10% (System Stress) Frequency Excursion: 47.5Hz to 51.5Hz
4-5	Power Quality Requirements	Power Factor: The Power Factor at the Connection Point shall be maintained at 0.85(lag) or above.	☐	
		Harmonic Emission Limit: THD and individual harmonics shall comply with Engineering Recommendation G5/4.	☐	
		Voltage Unbalance: The voltage unbalance shall not exceed 1.3% as per Engineering Recommendation P29.	☐	
		Flicker Emission Limit: The short-term and long-term flicker emission shall comply with Engineering Recommendation P28	☐	
4-6	Component Design & Requirements	The GCPV system shall be designed, rated and configured based on specific component requirements as per MS 1837: 2018. Refer 'note' for details.	☐	The component shall include (but is not limited to) the following: By-pass diodes, over-current protection, disconnecting means, emergency switching devices, earth fault protection, lightning protection (if applicable), over-voltage protection, PV Modules, PV array and sub-array connection boxes, switching devices and fuses

NET ENERGY METERING (NEM) CHECKLIST FOR APPLICATIONS <30kWac

REF	DESCRIPTIONS	CONTENTS	DECLARED BY	
			COMPLIED	NOTE
4-7	Inverter Features	Anti Islanding Protection *The proposed inverter shall be capable of being disconnected within 2 sec when the Sarawak Energy's supply fails/ disconnected.*	☐	
		Voltage Sag Immunity Requirement *To comply with SEMIF47*	☐	
		Ramp Rate Control < 15% *of rated capacity per minute*	☐	
		Protection Function • *2-stage under/overvoltage protection* • *2-stage under/over frequency protection*	☐	
		Re-connection time delay *GCPV shall remain disconnected for a minimum of 2 minutes or more, after synchronization criteria is met*	☐	
		Synchronisation criteria *The inverter shall only reconnect upon meeting the synchronisation criteria for the required time delay* Refer 'note' for details.	☐	• Frequency difference <0.3Hz • Voltage magnitude difference <10% • Voltage angle difference <20deg
4-8	Earthing	The earthing provision shall be designed in compliance with MS 1837: 2018 Refer 'note' for details.	☐	The design shall: a. Achieve equipotential bonding b. Provide a path for fault currents to flow to provide lightning protection (if applicable).

NET ENERGY METERING (NEM) CHECKLIST FOR APPLICATIONS <30kWac

REF	DESCRIPTIONS	CONTENTS	DECLARED BY	
			COMPLIED	NOTE
4-9	Wiring Requirements	The requirements on wiring installation, cable selection and cable insulation tests shall comply with IEC 60364-7-712 as referred by MS 1837: 2018.	☐	
4-10	Grid Connected Photovoltaic (GCPV) Switching Coordination Operating Practices	To provide visible caution notice at Metering cabinet* Background: Yellow Wording : Black Material : SWG 28 colour bonded or powder coated galvanized sheet. Refer 'note' for details.	☐	

To be used by Sarawak Energy (Distribution) only

NET ENERGY METERING (NEM) CHECKLIST FOR APPLICATIONS <30kWac

REF	DESCRIPTIONS	CONTENTS	ACKNOWLEDGED BY SEB (DISTRIBUTION)		
			ACCEPT	REJECT	NOTE
5-1	Penetration Limit	For single phase connection: *Max allowable Solar PV capacity connected to single LV feeder is 25kW only* Three phase connection: *Max quota not more 75% of total transformer loading between 1100hr to 1500hr*	☐	☐	
5-2	Inverter features	Anti Islanding protection *The proposed inverter shall be capable of being disconnected within 2 sec when Sarawak Energy's supply fails/ disconnected.*	☐	☐	

NET ENERGY METERING (NEM) CHECKLIST FOR APPLICATIONS <30kWac

Declaration By Submitter:

I hereby declare that all information provided in this application is accurate, true and complies with MS1837, all relevant IEC standards that is required by Sarawak Energy, as well as Sarawak Energy Engineering Circular 17/2021 – Guidelines for Solar Photovoltaic Installation on Net Energy Metering Scheme. I acknowledge that all documents submitted, and information provided are accurate and authentic and I further agree to assume full responsibility and accountability for any discrepancies and inaccuracies in respect thereof. I shall hereby be fully responsible for any costs that may be incurred and/or imposed on me arising out of delays on my part in the installation of the GCPV system.

_____

(Signature and Stamp)

Name :

Date :

	Submitted By:	**Design Approved By:**	**Acknowledged By:**
Sign and Stamp			
Name			
Date			
Designation	SESCO Registered Contractor	EIU Certified or Authorized GCPV Designer	Retail Application Team