



BSWM- BIDS AND AWARDS COMMITTEE

SUPPLEMENTAL BID BULLETIN

ADDENDUM NO. 2021-09-041-01

CONTRACT: SUPPLY, DELIVERY AND INSTALLATION OF SOLAR POWER SYSTEM AND UPGRADING OF EXISTING SOLAR POWER SYSTEM IN BSWM NSWRRDC HILLPEZ TANAY FOR CY 2021- IB NO. BSWM 2021-09-041

This **Addendum** is being issued in accordance with **Section 22.5.2 of the IRR of RA 9184**, to clarify and modify some provision of the Bidding Document. **THIS SHALL FORM AN INTEGRAL PART OF THE BID DOCUMENT.** Likewise, the succeeding agreements and reminders were discussed during the **Pre-Bid Conference** held last **October 12, 2021, 9:30AM at the BSWM Function Hall and via Videoconferencing-Zoom.**

I. DISCUSSION OF THE BIDDING DOCUMENT:

- **Total ABC of the contract: Php 3,950,000.00**
- Bidder must have completed a single contract that is similar to this project, equivalent to **at least fifty percent (50%) of the ABC (Php 1,975,000.00).**

Similar contracts shall be contract for supply, delivery and installation of solar power system and/or its equivalent, completed within two (2) consecutive years from the date of submission and receipt of bids.

- **Awarding:** Project having several items that shall be awarded as one contract.

II. CLARIFICATION AND AGREEMENTS DURING THE PRE-BID CONFERENCE:

QUERIES/CLARIFICATION/s	RESPONSE/AGREEMENT/s
Can the Schedule of Requirement /Completion of Work of 30 calendar days extended to 60 calendar days?	No. the fund source of the project is General Appropriations Act for CY 2020, which shall be in accordance with Republic Act No. 11520: An Act Extending the Availability of the 2020 Appropriations to December 31, 2021: <i>“Obligation, Completion/Delivery, Inspection and Payment shall be made not later than December 31, 2021.”</i>
For statement of all ongoing contract/s, do the bidder need to include the contract that has been completely delivered, but not yet paid?	Yes. contract/s that has not yet paid were not considered as completed. Amount or value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started, coinciding with the contract to be bid. The total amount of the ongoing and awarded but not yet started contracts should be consistent with those used in the Net Financial Contracting Capacity (NFCC). This statement shall be supported with Notice of Award. Please refer to the attached Annex C for the sample format of the statement.

Site inspection schedule.	<p>For schedule of site inspection, please email the BAC Secretariat at bswm.bacsec@gmail.com . (Site inspection shall be done prior to the submission and opening of bids.)</p> <p>Certificate of Site Inspection shall be attached on your bid proposal-technical envelope.</p>
----------------------------------	---

III. AMMENDMENTS IN THE BIDDING DOCUMENT:

SECTION III. BID DATA SHEET:

ORIGINAL	AMENDED
<p>ITB Clause 5.3</p> <p>For this purpose, contracts similar to the Project shall be:</p> <ul style="list-style-type: none"> a. Similar contract shall be for supply, delivery and installation of solar power system and/or its equivalent. b. Completed within two (2) years prior to the deadline for the submission and receipt of bids. <p>The Bidder must have completed a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.</p>	<p>ITB Clause 5.3</p> <p>For this purpose, contracts similar to the Project shall be:</p> <ul style="list-style-type: none"> a. Similar contract shall be for supply, delivery and installation of solar power system and/or its equivalent. b. Completed within two (2) years prior to the deadline for the submission and receipt of bids. <p>The Bidder must have completed a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.</p> <p>Attachment/s:</p> <p>SLCC shall be supported/of the end-user’s Official Receipt and/or Certificate of Completion/ Acceptance.</p>

SECTION VI. SCHEDULE OF REQUIREMENTS:

ORIGINAL	AMENDED
<p>Delivery of goods is required within thirty (30) calendar days upon receipt of Notice to Proceed (NTP).</p> <p>Supplier shall coordinate with the End-user for final schedule of delivery within 7 calendar days from receipt of Notice to Proceed.</p>	<p>Delivery of goods is required <u>on or before December 10, 2021.</u></p> <p>Supplier shall coordinate with the End-user for final schedule of delivery within 7 calendar days from receipt of Notice to Proceed.</p>

SECTION VII. TECHNICAL SPECIFICATIONS:

ORIGINAL	AMENDED
Item No. 1- 1 UNIT OF SOLAR POWER SYSTEM	



POWERWALL, 5kW/10kWh, 220Vac/48Vdc Parallel Capability (Lithium Iron Phosphate battery 10kWh capacity with built in 5kW capacity inverter)	<p>BATTERY:</p> <p>POWERWALL, 5kW/10kWh, 220Vac/48Vdc Parallel Capability</p> <p>(In each cabinet: Lithium Iron Phosphate battery 10kWh capacity plus built in 5kW capacity inverter)</p>
	<p>Additional requirement under the technical specification:</p> <p>Design- shall be placed in Technical Envelope of your Bid proposal.</p>
Item No. 2- UPGRADING OF EXISTING SOLAR POWER SYSTEM	
<p>450 watts solar PV module</p> <p>Solar battery</p> <p>Rail kits unisolar</p> <p>Complete line conductor and protections</p> <p>Design, delivery and installation</p> <p>Note: Must be compatible with the existing unit installed in Tanay.</p> <p>Site Inspection Certificate- Site inspection shall be done prior to the submission and opening of bids. Please coordinate with Mr. Joven Espineli of Tanay Station for site inspection.</p> <p>Installation: Written agreement per recipient must be agreed, signed, and notarized within the delivery period.</p>	<p>8 pcs PV Module, 450Wp</p> <p><u>PV Module Specification:</u></p> <p>ELECTRICAL DATA (STC)</p> <p>Rated Power in Watts-Pmax (Wp): 450</p> <p>Open Circuit Voltage-Voc(V): 49.70</p> <p>Short Circuit Current-Isc (A): 11.50</p> <p>Maximum Power Voltage- Vmpp(V): 41.30</p> <p>Maximum Power Current- Impp(A): 10.90</p> <p>Module Efficiency (%) : 20.4</p> <p>STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to EN 60904-3.</p> <p>*Module Efficiency (%): Round-off to the nearest number</p> <p>ELECTRICAL DATA (NMOT)</p> <p>Maximum Power-Pmax (Wp): 338.2</p> <p>Open Circuit Voltage-Voc(V): 46.43</p> <p>Short Circuit Current-Isc (A): 9.43</p> <p>Maximum Power Voltage- Vmpp(V): 38.00</p> <p>Maximum Power Current- Impp(A): 8.90</p> <p>NMOT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.</p> <p>MECHANICAL DATA</p> <p>Solar cells: Monocrystalline 166x83mm</p> <p>Cell configuration: 144 cells (6x12+6x12)</p> <p>Module dimensions: 2108x1048x 40mm</p> <p>Weight: 25kg</p> <p>Superstrate: High Transmission, Low Iron, Tempered ARC Glass</p> <p>Substrate: White Back-sheet</p> <p>Frame: Anodized Aluminum Alloy type 6063T5, Silver Color</p> <p>J-Box: Potted, IP68, 1500VDC, 3 Schottky bypass diodes</p>



	<p>Cables: 4.0mm² (12AWG), Positive (+) 270mm, Negative (-) 270mm</p> <p>Connector: Risen Twinsel PV-SY02, IP68</p> <p>TEMPERATURE & MAXIMUM RATINGS</p> <p>Nominal Module Operating Temperature NMOT: 44°C±2°C</p> <p>Temperature Coefficient of Voc: -0.29%/°C</p> <p>Temperature Coefficient of Isc: 0.05%/°C</p> <p>Temperature Coefficient of Pmax: -0.37%/°C</p> <p>Operational Temperature: -40°C- +85°C</p> <p>Maximum System Voltage: 1500VDC</p> <p>Max Series Fuse Rating: 20A</p> <p>Limiting Reverse Current: 20A</p> <p>1 pc POWERWALL 1-10KWH/48V</p> <p>Specification</p> <p>Combination Method: 15S</p> <p>Rated capacity: Typical 200Ah, Minimum 200Ah</p> <p>Factory Voltage: 49.5-50.5V</p> <p>Voltage at the end of discharge: 40-42.5V</p> <p>Charging voltage: 53.2-54V</p> <p>Internal Impedance: < 50m</p> <p>Standard charge: Constant current 20A</p> <p>Standard discharge: Constant current 20A end voltage</p> <p>Maximum continuous charge current: 100A</p> <p>Maximum continuous discharge current: 100A</p> <p>Operation temperature range: Charge 0-450C, Discharge -20-550C</p> <p>Storage Temperature range: Less than 12 months: -10-35oC, Less than 3 months: -10-45oC, Less than 7 day -20-65oC</p> <p>Cycle life: > 6000cycle</p> <p>Dimension: 480*650*242mm</p> <p>Weight: 88kg</p> <p>Volumetric specific: 127WH/L</p> <p>Gravimetric specific energy: 109WF/Kg</p> <p>2 pcs Rail kit Unisolar</p> <p>1 lot Complete Line Conductor</p> <p>Inclusion:</p> <p>Design, delivery and installation</p> <p>Note: Must be compatible with the existing unit installed in Tanay</p>
Please refer to the attached Annex A for the Revised Section VII. Technical Specification.	



IV. REMINDERS DURING THE PRE-BID CONFERENCE:

- The Bureau is now adopting the GPPB Resolution No. 16-2020 dated September 16, 2020 (Simplified PBDs shall be used for Competitive Bidding of Procurement Projects that will be posted upon its effectivity on 06 October 2020).
- The documents required for eligibility, technical proposal and financial proposal are found at **Section VIII – Checklist of Technical and Financial Documents for Goods** and **Section IX. Checklist of Technical and Financial Documents for Infrastructure** of the bidding document.
- Please refer to the bidding document for the **sample form of Single Largest Completed Contract (SLCC)** and form for **Statement of all ongoing Government & Private Contracts** including Contracts Awarded but not yet started for your reference.

Note: if no ongoing projects/ contracts, please state “none” or “no ongoing projects/contracts” in the form for the Statement of all on going Government and Private Contracts.

- Bidding will be conducted through open competitive bidding procedures using a non-discretionary “pass/fail” criterion as specified in the Implementing Rules and Regulations (IRR) of Republic Act (RA) 9184, otherwise known as the “Government Procurement Reform Act”

“Any lacking documents can cause the automatic disqualification of bids.”

- Below are the **acceptable forms of bid security** that bidders may opt to use, **which shall include the Bid Securing Declaration**. The amount of which shall not be less than the required percentage of the ABC in accordance with the following schedule:

Form of Bid Security	Amount of Bid Security (Not less than the required Percentage of the ABC)
Cash or cashier’s/manager’s check issued by a Universal or Commercial Bank.	Two percent (2%)
Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.	
Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security.	Five percent (5%)

Please NOTE:

Surety bond issued by GSIS as well as a cash deposit certificate is no longer accepted.

Bids and Bid Securities should be valid and firm for a period that shall not exceed one hundred twenty (120) calendar days after the date of the opening of bids.

- Net Financial Contracting Capacity (NFCC):

The computation of a prospective bidder’s NFCC must be **at least equal to the ABC to be bid** or, for procurement by lot, **at least equal to the sum of all the ABCs of lots to which it participated**.



NFCC= Current assets minus current liabilities multiplied by 15 (constant factor) minus the value of all outstanding or uncompleted portions of on-going contracts, including awarded contract/s yet to be started, coinciding with the contract to be bid.

○ **Sealing and marking of bid proposal- The bidder shall submit:**

1. One (1) ORIGINAL COPY.
2. One (1) DUPLICATE COPY.
3. One (1) PDF COPY in a USB or CD – to be placed inside the Duplicate Copy of Technical Proposal and Duplicate Copy of Financial Proposal.

Please refer to Annex B for illustration.

NOTE:

All photocopied documents must be stamped and signed “Certified True Copy”. And all pages/documents must be duly signed by the authorized representative (both original and duplicate copies).

For easy reference, all bidders are requested to provide dog-ear codes/ tabs in the presentation of their documents.

○ **Reminders:**

- ✓ Bidders responsibility to read, study, and review the Bidding Document and Bid Bulletin/s of the procurement project.
- ✓ Further clarification/s on the Bidding Document shall be in writing and must be submitted 10 days before the Opening of Bids.
- ✓ All bidders who wish to join the bidding shall download the attached document from PhilGEPS website to be included in the Document Request List (DRL).
- ✓ Bidders may download the updated Bidding Forms at GPPB Website (<https://www.gppb.gov.ph/downloadables.php>).
- ✓ Schedule of Submission and Opening of Bids is subject to change due to Community Quarantine enforced by the government in line with the COVID-19 pandemic. For updates, please refer to the BSWM PhilGEPS posting (<https://www.philgeps.gov.ph/>) and BSWM Procurement Service FB page <https://www.facebook.com/bswmpms>.
- ✓ Authorization letter and a copy of company ID shall be presented by the Representative of the Bidder who will submit the bid proposal and who will attend the Opening of Bids, on-site or online.
- ✓ In case of withdrawal of submitted bid, a letter stating their intention to withdraw from the project should be submitted by the bidder not later than the scheduled deadline of submission and opening of bids.
- ✓ Bidders declared to have the Lowest/ Single Calculated Bid will be subject for Post-qualification.
- ✓ Bidder shall submit the additional requirements listed on the NOTICE as LCB/ SCB within five (5) calendar days from receipt of Notice. *Non-compliance can be grounds for post-disqualification.*
- ✓ Winning Bidders declared to have the Lowest/Single Calculated and Responsive Bid shall submit its Performance Bond and Signed Contract Agreement within ten (10) calendar days from receipt of Notice.

○ **Warranty in accordance with Section 62 of 2016 IRR of RA 9184:**

For the **procurement of Goods**, in order to assure that manufacturing defects shall be corrected by the supplier, a **warranty security** shall be required from the contract awardee, after acceptance by the Procuring Entity of the delivered supplies, for a:

- ✓ minimum period of three (3) months, in the case of Expendable Supplies, or a
- ✓ minimum period of one (1) year, in the case of Non-Expendable Supplies.

The obligation for the warranty shall be covered by either:

- ✓ retention money in an amount equivalent to at least one percent (1%) but not to exceed five percent (5%) of every progress payment, or a
- ✓ special bank guarantees equivalent to at least one percent (1%) but not to exceed five percent (5%) of the total contract price.

The said amounts shall only be released after the lapse of the warranty period or, in the case of Expendable Supplies, after consumption thereof: Provided, however, that the supplies delivered are free from patent and latent defects and all the conditions imposed under the contract have been fully met.

For **Infrastructure Project** please refer to **Section 62.2** of the 2016 Revised IRR of RA 9184.

- A complete set of **Bidding Document** may be acquired by interested Bidders until **October 21, 2021 9:00AM** from the address and website below and **upon payment** of the applicable fee, pursuant to the latest Guidelines issued by the GPPB, in the amount of **Php 4,000.00**.

For bank-to-bank payment (Land bank of the Philippines) for the purchase of bidding documents, please coordinate with the BAC Secretariat thru bswm.bacsec@gmail.com.

DEADLINE/SCHEDULE OF SUBMISSION AND OPENING OF BIDS:

Deadline of submission of bid proposals is on October 26, 2021, 9:00AM.

Opening of Bids is on October 26, 2021, 9:30AM at BSWM Function Hall and via videoconferencing (Zoom).

For precautionary measure against the COVID 19, bidder attendance will be through videoconferencing only. For zoom link, please email the BAC Secretariat at bswm.bacsec@gmail.com.

For guidance and information of all concerned.

(Sgd) DR. GINA P. NILO

BAC Chairperson

Statement of Single Largest Completed Contract similar to the contract to be bid

Business Name : _____
Business Address : _____
Business Contact Nos and Email Address: _____

Name of Contract/Projects	a. Owner's Name b. Address c. Telephone Nos.	Definition/Description of the similar contract	Bidder's Role		a. Contract Date b. Contract Period c. Contract Amount	a. Date Awarded b. Date Started c. Date of Completion
			Description	%		
<u>Government / Private</u>						

Note: The value is adjusted to the current prices using the Philippine Statistics Authority consumer price indices, when necessary;

Note: This statement shall be supported with end user's acceptance or official receipt(s) or sales invoice issued for the contract

Signature over Printed Name
[title or other appropriate designation]
[date of signing]

Statement of All Ongoing Government & Private Construction Contracts including contracts awarded but not yet started

Business Name : _____
 Business Address : _____
 Business Contact Nos and Email Address: _____

Name of Contract/Projects	a. Owner's Name b. Address c. Telephone Nos.	Nature of Work	Bidder's Role		a. Contract Date b. Contract Period c. Contract Amount	% of Accomplishment		Value of Outstanding Contracts	Date of Delivery, if applicable
			Description	%		Planned	Actual		
<u>Government / Private</u>									

Note: This statement shall be supported with Notice of Award.

 Signature over Printed Name
[title or other appropriate designation]
 [date of signing]

Instructions:

- i. State all ongoing contracts including those awarded but not yet started (government and private contracts which may be similar or not similar to the project being bid).
- ii. If there is no ongoing contract including awarded but not yet started as of the aforementioned period, state none or equivalent term.
- iii. Amount or value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started, coinciding with the contract to be bid. The total amount of the ongoing and awarded but not yet started contracts should be consistent with those used in the Net Financial Contracting Capacity (NFCC).

Annex A

REVISED Section VII. Technical Specifications

Item	Specification	Statement of Compliance
		<p><i>[Bidders must state here either “Comply” or “Not Comply” against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer’s un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder’s statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]</i></p>

Item	Specifications	Qty	Unit	Statement of Compliance
1	1 UNIT OF SOLAR POWER SYSTEM			
	PV Module, 450Wp	60	pcs	
	PV Module Specification ELECTRICAL DATA (STC) Rated Power in Watts-Pmax (Wp): 450 Open Circuit Voltage-Voc(V): 49.70 Short Circuit Current-Isc (A): 11.50 Maximum Power Voltage- Vmpp(V): 41.30 Maximum Power Current- Impp(A): 10.90 Module Efficiency (%) : 20.4 STC: Irradiance 1000 W/m², Cell Temperature			

	<p>25°C, Air Mass AM1.5 according to EN 60904-3.</p> <p>*Module Efficiency (%): Round-off to the nearest number</p> <p>ELECTRICAL DATA (NMOT)</p> <p>Maximum Power-Pmax (Wp): 338.2</p> <p>Open Circuit Voltage-Voc(V): 46.43</p> <p>Short Circuit Current-Isc (A): 9.43</p> <p>Maximum Power Voltage- Vmpp(V): 38.00</p> <p>Maximum Power Current- Impp(A): 8.90</p> <p>NMOT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.</p>			
	<p>MECHANICAL DATA</p> <p>Solar cells: Monocrystalline 166x83mm</p> <p>Cell configuration: 144 cells (6x12+6x12)</p> <p>Module dimensions: 2108x1048x 40mm</p> <p>Weight: 25kg</p> <p>Superstrate: High Transmission, Low Iron, Tempered ARC Glass</p> <p>Substrate: White Back-sheet</p> <p>Frame: Anodized Aluminum Alloy type 6063T5, Silver Color</p> <p>J-Box: Potted, IP68, 1500VDC, 3 Schottky bypass diodes</p> <p>Cables: 4.0mm² (12AWG), Positive (+) 270mm, Negative (-) 270mm</p> <p>Connector: Risen Twinsel PV-SY02, IP68</p>			
	<p>TEMPERATURE & MAXIMUM RATINGS</p> <p>Nominal Module Operating Temperature</p> <p>NMOT: 44°C±2°C Temperature Coefficient of Voc: -0.29%/°C</p> <p>Temperature Coefficient of Isc: 0.05%/°C</p> <p>Temperature Coefficient of Pmax: -0.37%/°C</p> <p>Operational Temperature: -40°C- +85°C</p> <p>Maximum System Voltage: 1500VDC</p> <p>Max Series Fuse Rating: 20A</p> <p>Limiting Reverse Current: 20A</p>			
	<p>BATTERY:</p> <p>POWERWALL, 5kW/10kWh, 220Vac/48Vdc Parallel Capability (In each cabinet: Lithium Iron Phosphate battery 10kWh capacity plus built in 5kW capacity inverter)</p>	5	units	
	<p>Powerwall -2 Specification</p> <p>PV Input</p> <p>PV Max power (w): 4500</p> <p>Max voltage (v): 145</p> <p>MPPT range (v): 60-115V</p> <p>Max input current (A): 80</p>			

	MPPT number: 1 AC Output Rated power (w): 5000 Rated output voltage (v): 230 Grid voltage range (v): 230Vac/170-280Vac Grid frequency range (Hz): 50(45-54)/60(55-65) Rated output current (A): 22 AC Charger Max. AC Charge Current (A): 60 AC Input voltage (v): 230 Selectable Voltage Range (VAC): 170-280 (For Personal Computers) 90-280 (For Home Appliances) Transfer Time: 10 ms (For Personal Computers); 20 ms(For Home Appliances)			
	Battery Battery Type: LFP Nominal Voltage (v): 48 Max Charging Power (W): 5000 Max Charging Current (A): 200 Max Discharging Power (W): 5000 Max Discharging Current (A): 200 Battery Capacity (Ah): 200 System Max efficiency [%]: 97.2%/ 97.7% Europe efficiency [%]: 96.5%/ 97% Installation: Floor mounted against the wall IP Grade: IP54 Cooling: Air cooling Display: LED/APP Ambient humidity: 10-90%, non-condensation Temperature (°C): -25~45 Operation altitude (m): 0-3000 Dimension(WxHxD) [mm]: 698*220*1638 Weight (kg): 110 Communication Interface: RS485 (Standard), CAN-BUS (Internal communication), Wifi			
	PV Railkits (3-Rails per Module)			
	PV RAILkits 4.4m	42	pcs	
	L-FEET	176	pcs	
	END CLAMP	12	pcs	
	MIDCLAMP	180	pcs	
	RAIL SPLICE	48	pcs	
	DC & AC Line Conductor & Protections	1	lot	
	Miscellaneous Hardware Materials	1	lot	
	Inclusion:			
	Delivery			
	Design & Installation			
	Design- shall be placed in Technical Envelope of your Bid proposal.			

	<p>Site Inspection Certificate (required to be attached on your bid proposal- technical envelope)</p> <p>Site inspection shall be done prior to the submission and opening of bids.</p> <p>Please coordinate with Mr. Joven Espineli of Tanay Station for site inspection.</p>			
2	UPGRADING OF EXISTING SOLAR POWER SYSTEM	1	lot	
	PV Module, 450Wp	8	pcs	
	<p>PV Module Specification</p> <p>ELECTRICAL DATA (STC) Rated Power in Watts-Pmax (Wp): 450 Open Circuit Voltage-Voc(V): 49.70 Short Circuit Current-Isc (A): 11.50 Maximum Power Voltage- Vmpp(V): 41.30 Maximum Power Current- Impp(A): 10.90 Module Efficiency (%) : 20.4</p> <p>STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to EN 60904-3. *Module Efficiency (%): Round-off to the nearest number</p> <p>ELECTRICAL DATA (NMOT) Maximum Power-Pmax (Wp): 338.2 Open Circuit Voltage-Voc(V): 46.43 Short Circuit Current-Isc (A): 9.43 Maximum Power Voltage- Vmpp(V): 38.00 Maximum Power Current- Impp(A): 8.90</p> <p>NMOT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.</p>			
	<p>MECHANICAL DATA Solar cells: Monocrystalline 166x83mm Cell configuration: 144 cells (6x12+6x12) Module dimensions: 2108x1048x 40mm Weight: 25kg Superstrate: High Transmission, Low Iron, Tempered ARC Glass Substrate: White Back-sheet Frame: Anodized Aluminum Alloy type 6063T5, Silver Color J-Box: Potted, IP68, 1500VDC, 3 Schottky bypass diodes Cables: 4.0mm² (12AWG), Positive (+) 270mm, Negative (-) 270mm Connector: Risen Twinsel PV-SY02, IP68</p>			

	TEMPERATURE & MAXIMUM RATINGS Nominal Module Operating Temperature NMOT: 44°C±2°C Temperature Coefficient of Voc: -0.29%/°C Temperature Coefficient of Isc: 0.05%/°C Temperature Coefficient of Pmax: -0.37%/°C Operational Temperature: -40°C- +85°C Maximum System Voltage: 1500VDC Max Series Fuse Rating: 20A Limiting Reverse Current: 20A			
	POWERWALL 1-10KWH/48V	1		
	Specification Combination Method: 15S Rated capacity: Typical 200Ah, Minimum 200Ah Factory Voltage: 49.5-50.5V Voltage at the end of discharge: 40-42.5V Charging voltage: 53.2-54V Internal Impedance: < 50m Standard charge: Constant current 20A Standard discharge: Constant current 20A end voltage Maximum continuous charge current: 100A Maximum continuous discharge current: 100A Operation temperature range: Charge 0-450C, Discharge -20-550C Storage Temperature range: Less than 12 months: -10-35oC, Less than 3 months: -10-45oC, Less than 7 day -20-65oC Cycle life: > 6000cycle Dimension: 480*650*242mm Weight: 88kg Volumetric specific: 127WH/L Gravimetric specific energy: 109WF/Kg			
	Rail kit Unisolar	2	pc	
	Complete Line Conductor	1	lot	
	Inclusion: Design, delivery and installation			
	Note: Must be compatible with the existing unit installed in Tanay.			
	Compliance with Section VI. Schedule of Requirements.			

Name and Signature of Authorized Representative

Company Name

Date Signed

Sealing and Marking of Bid:

