

REQUEST FOR QUOTATION (RFQ)

RFQ Reference: Improving Rural Development in Georgia/

00101419/00097870

Date: 07 April 2021

SECTION 1: REQUEST FOR QUOTATION (RFQ)

UNDP kindly requests your quotation for the Provision and installation of solar power for Lagodekhi Business Service Yard as detailed in Annex 1 of this RFQ.

A pre-proposal conference for the interested bidders will be held on:

Date: 14 April 2021 Time: 12:00 PM Venue: Via Zoom

Link: https://undp.zoom.us/j/84530760231

This Request for Quotation comprises the following documents:

Section 1: This request letter

Section 2: RFQ Instructions and Data

Annex 1: Schedule of Requirements

Annex 2: Quotation Submission Form

Annex 3: Technical and Financial Offer

When preparing your quotation, please be guided by the RFQ Instructions and Data. Please note that quotations must be submitted using Annex 2: Quotation Submission Form and Annex 3 Technical and Financial Offer, by the method and by the date and time indicated in Section 2. It is your responsibility to ensure that your quotation is submitted on or before the deadline. Quotations received after the submission deadline, for whatever reason, will not be considered for evaluation.

Thank you and we look forward to receiving your quotations.

Issued by:

Signature

Name: Nodar Kereselidze

Title: National Project Manager

Date: 7 April 2021

SECTION 2: RFQ INSTRUCTIONS AND DATA

Introduction	Bidders shall adhere to all the requirements of this RFQ, including any
	amendments made in writing by UNDP. This RFQ is conducted in accordance
	with the UNDP Programme and Operations Policies and Procedures (POPP)
	on Contracts and Procurement
	Any Bid submitted will be regarded as an offer by the Bidder and does not
	constitute or imply the acceptance of the Bid by UNDP. UNDP is under no
	obligation to award a contract to any Bidder as a result of this RFQ.
	obligation to award a contract to any bidder as a result of this Ki Q.
	UNDP reserves the right to cancel the procurement process at any stage
	without any liability of any kind for UNDP, upon notice to the bidders or
	publication of cancellation notice on UNDP website.
Deadline for	21/04/2021 5:00 pm GMT +4
the	If any doubt exists as to the time zone in which the quotation should be submitted, refer to
Submission	http://www.timeanddate.com/worldclock/.
of Quotation	
Method of	Quotations must be submitted as follows:
Submission	☐ Courier / Hand delivery
	Bid submission address: 9 Eristavi Str., Tbilisi, Georgia.
	The sealed envelopes must be clearly marked with the title of the Tender and respective project
	name (Improving Rural Development in Georgia).
	The box will be allocated at the first floor of the UN House indicating the title of the tender.
	Contact person: Ms. Natia Gobejishvili,
	E-mail address: natia.gobejishvili@undp.org
	It shall remain your responsibility to ensure that your quotation will reach the address above on
	or before the deadline in sealed envelopes. Quotations that are received by UNDP after the
	deadline indicated above, for whatever reason, shall not be considered for evaluation.
Cost of	UNDP shall not be responsible for any costs associated with a Supplier's preparation and
preparation	submission of a quotation, regardless of the outcome or the manner of conducting the selection
of quotation	process.
Supplier	All prospective suppliers must read the United Nations Supplier Code of
Code of	Conduct and acknowledge that it provides the minimum standards expected
Conduct,	of suppliers to the UN. The Code of Conduct, which includes principles on
Fraud,	labour, human rights, environment and ethical conduct may be found at:
Corruption,	https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct
•	Moreover, UNDP strictly enforces a policy of zero tolerance on proscribed practices, including
	fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNDP
	vendors and requires all bidders/vendors to observe the highest standard of ethics during the
	procurement process and contract implementation. UNDP's Anti-Fraud Policy can be found at
	http://www.undp.org/content/undp/en/home/operations/accountability/audit/office of audit
	andinvestigation.html#anti
	<u></u>
Gifts and	Bidders/vendors shall not offer gifts or hospitality of any kind to UNDP staff members including
Hospitality	recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation,
	or invitations to extravagant lunches, dinners or similar. In pursuance of this policy, UNDP: (a)
	Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or
	fraudulent practices in competing for the contract in question; (b) Shall declare a vendor
	ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it
	incugiore, etitier indefinitely of for a stated period, to be awarded a contract if at any time it

termines that the vendor has engaged in any corrupt or fraudulent practices in competing for, in executing a UNDP contract. IDP requires every prospective Supplier to avoid and prevent conflicts of interest, by disclosing UNDP if you, or any of your affiliates or personnel, were involved in the preparation of the puirements, design, specifications, cost estimates, and other information used in this RFQ. Idders shall strictly avoid conflicts with other assignments or their own interests, and act chout consideration for future work. Bidders found to have a conflict of interest shall be qualified. Idders must disclose in their Bid their knowledge of the following: a) If the owners, part-owners, iders, directors, controlling shareholders, of the bidding entity or key personnel who are family imbers of UNDP staff involved in the procurement functions and/or the Government of the untry or any Implementing Partner receiving goods and/or services under this RFQ. In eligibility of Bidders that are wholly or partly owned by the Government shall be subject to IDP's further evaluation and review of various factors such as being registered, operated and imaged as an independent business entity, the extent of Government ownership/share, receipt subsidies, mandate and access to information in relation to this RFQ, among others. Inditions that may lead to undue advantage against other Bidders may result in the eventual election of the Bid. IN PURCHASE Order or contract that will be issued as a result of this RFQ shall be subject to the ineral Conditions of Contract elect the applicable GTC: General Terms and Conditions for Works
UNDP if you, or any of your affiliates or personnel, were involved in the preparation of the quirements, design, specifications, cost estimates, and other information used in this RFQ. Iders shall strictly avoid conflicts with other assignments or their own interests, and act shout consideration for future work. Bidders found to have a conflict of interest shall be qualified. Iders must disclose in their Bid their knowledge of the following: a) If the owners, part-owners, iders, directors, controlling shareholders, of the bidding entity or key personnel who are family embers of UNDP staff involved in the procurement functions and/or the Government of the untry or any Implementing Partner receiving goods and/or services under this RFQ. In the eligibility of Bidders that are wholly or partly owned by the Government shall be subject to an appear of the procurement of Government ownership/share, receipt subsidies, mandate and access to information in relation to this RFQ, among others. In the eventual election of the Bid. In the procurement of the subject to the neral Conditions of Contract that will be issued as a result of this RFQ shall be subject to the neral Conditions of Contract ect the applicable GTC:
icers, directors, controlling shareholders, of the bidding entity or key personnel who are family embers of UNDP staff involved in the procurement functions and/or the Government of the curtry or any Implementing Partner receiving goods and/or services under this RFQ. The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to IDP's further evaluation and review of various factors such as being registered, operated and imaged as an independent business entity, the extent of Government ownership/share, receipt subsidies, mandate and access to information in relation to this RFQ, among others. Inditions that may lead to undue advantage against other Bidders may result in the eventual ection of the Bid. The Purchase Order or contract that will be issued as a result of this RFQ shall be subject to the neral Conditions of Contract ect the applicable GTC:
IDP's further evaluation and review of various factors such as being registered, operated and inaged as an independent business entity, the extent of Government ownership/share, receipt subsidies, mandate and access to information in relation to this RFQ, among others. Inditions that may lead to undue advantage against other Bidders may result in the eventual ection of the Bid. BY Purchase Order or contract that will be issued as a result of this RFQ shall be subject to the neral Conditions of Contract ect the applicable GTC:
neral Conditions of Contract ect the applicable GTC:
ect the applicable GTC:
plicable Terms and Conditions and other provisions are available at UNDP/How-we-y
✓ Cancellation of PO/Contract for works if the delivery/completion is delayed by [14 days]
rendor who will be engaged by UNDP may not be suspended, debarred, or otherwise identified ineligible by any UN Organization or the World Bank Group or any other international ganization. Vendors are therefore required to disclose to UNDP whether they are subject to any action or temporary suspension imposed by these organizations. Failure to do so may result in mination of any contract or PO subsequently issued to the vendor by UNDP.
is the Bidder's responsibility to ensure that its employees, joint venture members, sub- ntractors, service providers, suppliers and/or their employees meet the eligibility requirements established by UNDP.
ders must have the legal capacity to enter a binding contract with UNDP and to deliver in the
untry, or through an authorized representative. otations shall be quoted in USD
3.3.3.3.3.3.3.4.4.3.3.4.4.3.3.3.3.3.3.3
the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV),
nsortium or Association for the Bid, they shall confirm in their Bid that: (i) they have designated e party to act as a lead entity, duly vested with authority to legally bind the members of the JV,
nsortium or Association jointly and severally, which shall be evidenced by a duly notarized
r

Only one Bid The Bidder (including the Lead Entity on behalf of the individual members of any Joint Venture, Consortium or Association) shall submit only one Bid, either in its own name or, if a joint venture, Consortium or Association, as the lead entity of such Joint Venture, Consortium or Association. Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following: a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or b) they have the same legal representative for purposes of this RFQ; or c) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Bid of, another Bidder regarding this RFQ process; d) they are subcontractors to each other's Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or e) some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this RFQ process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid. **Duties and** Article II, Section 7, of the Convention on the Privileges and Immunities provides, inter alia, that taxes the United Nations, including UNDP as a subsidiary organ of the General Assembly of the United Nations, is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. All quotations shall be submitted net of any direct taxes and any other taxes and duties, unless otherwise specified below: All prices must: ☑ be exclusive of VAT and other applicable indirect taxes Language of quotation Including documentation including catalogues, instructions and operating manuals. **Documents** Bidders shall include the following documents in their quotation: to be ☑ Annex 2: Quotation Submission Form duly completed and signed submitted ☑ Annex 3: Technical and Financial Offer duly completed and signed and in accordance with the Schedule of Requirements in Annex 1 □ Company Profile. ☑ Registration certificate ☑ List and value of projects performed for the last 3 years plus client's contact details who may be contacted for further information on those contracts ☑ List and value of ongoing Projects with UNDP and other national/multi-national organization with contact details of clients and current completion ratio of each ongoing project ☑ Statement of satisfactory Performance (Certificates) from the top 2 clients in terms of Contract value in similar field ☑ Completed and signed CVs for the proposed key Personnel Minimum no. of staff with the required qualification and experience; 3 personnel: 1 Civil Engineer, 1 Electric Engineer, 1 safety assurance specialist Civil Engineer --: University degree in civil engineering, architecture of relevant field (Diplomas and CVs) with at least 5 years of professional experience in construction Works. Electric engineer: University degree in electric engineering, of relevant field (Diplomas and CVs) with at least 5 years of professional experience in electric engineering. Safety assurance specialist: at least 2 years of relevant work experience (CV). ☑ Quality certificates for the main materials and devices as described in the Annex1 **Certificates:** ✓ Solar Panels - European Origin Quality Certificate or the certificate which

confirms the compliance with the European Standards with prefix En. Inverter - European Origin Certificate or the certificate which confirms the

compliance with the European Standards with prefix En

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	✓ KBE Solar or similar special solar cable - European Origin Certificate or the
	certificate which confirms the compliance with the European Standards
	with prefix En
	✓ Corrugated protection for solar cable - European Origin Certificate or the
	certificate which confirms the compliance with the European Standards
	with prefix En
	✓ Diesel generator - European Origin Certificate or the certificate which
	confirms the compliance with the European Standards with prefix En
	✓ Battery system - European Origin Certificate or the certificate which
	confirms the compliance with the European Standards with prefix En
	☑ Necessary equipment (owned or rented)- Diesel generator (2 KW, 2 pcs), Rotary
	hammer two-speed (0.5 KW, 2 pcs), Slow-speed drill (0.6 KW, 2 pcs), Electric
	screwdriver (0.3 Kw, 2 pcs), Iron for welding plastic pipes (1.2 KW, 2 pcs), Safety
	grinder (0.9 KW, 2 pcs). A set of measuring and controlling power tools.
	☑ Warranty letter for materials as described in the Annex1
	·
	Warranties:
	✓ Solar Panels – Producer's warranty for 5 years; Supplier's warranty for 5 years.
	✓ Inverter – Producer's warranty for 5 years; Supplier's warranty for 5 years.
	✓ Battery system – Producer's warranty for 5 years; Supplier's warranty for 5 years.
	 ✓ Mounting structure for solar panels in modular strings (Each module design for 10 panels) - producer's warranty for 5 years; Supplier's warranty for 5 years.
	 Froducer's warranty for 5 years, supplier's warranty for 5 years; ✓ KBE Solar or similar special solar cable - Producer's warranty for 5 years; Supplier's
	warranty for 5 years.
	✓ Corrugated protection for solar cable - Producer's warranty for 5 years; Supplier's
	warranty for 5 years.
	✓ Diesel Generator – Warranty for 2 years.
	✓ Warranty for completed works for the smooth operation of Solar Power for the duration
	of 5 years.
	☑ Minimum Annual turnover of USD 50 000.00 per year for the past two years (2019-2020).
(Quotation	Quotations shall remain valid for 90 days from the deadline for the Submission of Quotation.
validity	7
period	
Price	No price variation due to escalation, inflation, fluctuation in exchange rates, or
variation	any other market factors shall be accepted at any time during the validity of the
	quotation after the quotation has been received.
Partial	Not permitted
Quotes	
Alternative	
Quotes	
Payment	⊠100% within 30 days after receipt of goods, works and/or services and
Terms	submission of payment documentation.
	☐ Payment will be linked to every stage of works envisaged in the contract.
	UNDP shall effect payment of the invoices after receipt of the certificate of
	payment issued by the Engineer, approving the amount contained in the invoice.
	The Engineer may make corrections to that amount, in which case UNDP may
	effect payment for the amount so corrected.
	☐ Payment will be made in GEL according to existing UN Official Rate of
	Exchange at the date of payment.
Conditions	☐ Passing Inspection, Complete Installation
for Release	☑ Passing all Testing
of	☑ Written Acceptance of Goods and Works, based on full compliance with RFQ requirements
Payment	

Contact	E-mail address: natia.gobejishvili@undp.org
Person for	Attention: Quotations shall not be submitted to this address but to the address
corresponde	for quotation submission above. Otherwise, offer shall be disqualified.
nce,	Any delay in UNDP's response shall be not used as a reason for extending the
notifications	deadline for submission, unless UNDP determines that such an extension is
and	necessary and communicates a new deadline to the Proposers.
clarifications	
Clarifications	Requests for clarification from bidders will not be accepted any later than 5 days
	before the submission deadline. Responses to request for clarification will be
	communicated via e-mail by 16 April 2021
Evaluation	☑The Contract or Purchase Order will be awarded to the lowest price substantially compliant
method	offer
Evaluation	
criteria	□ Full acceptance of the General Conditions of Contract
	☐ The provision and installation of the Solar Power should be completed within 90 days after
	signing of the civil work contract.
Right not to	UNDP is not bound to accept any quotation, nor award a contract or Purchase Order
accept any	
quotation	
Right to vary	At the time of award of Contract or Purchase Order, UNDP reserves the right to
requirement	vary (increase or decrease) the quantity of services and/or goods, by up to a
at time of	maximum twenty-five per cent (25%) of the total offer, without any change in
award	the unit price or other terms and conditions.
Type of	✓ Contract for Works
Contract to	
be awarded	
Expected	12 May 2021
date for	
contract	
award.	LINDS will would take a contract accorded to be added 155 400 000 and accorded to
Publication	UNDP will publish the contract awards valued at USD 100,000 and more on the
of Contract Award	websites of the CO and the corporate UNDP Web site.
	This PEO is conducted in accordance with LINDR Programme and Operations Policies and
Policies and procedures	This RFQ is conducted in accordance with <u>UNDP Programme and Operations Policies and Procedures</u>
UNGM	Any Contract resulting from this RFQ exercise will be subject to the supplier
registration	being registered at the appropriate level on the United Nations Global
registration	Marketplace (UNGM) website at www.ungm.org.
	The Bidder may still submit a quotation even if not registered with the UNGM,
	however, if the Bidder is selected for Contract award, the Bidder must register on
	the UNGM prior to contract signature.
<u> </u>	The ortan prior to contract signature.

ANNEX 1: SCHEDULE OF REQUIREMENTS

Statement of works

Within the framework of the third phase of ENPARD (ENPARD III), UNDP Georgia is implementing the project "Improving Rural Development in Georgia" (IRDG). The project contributes to improved governance in rural development, rural economic diversification and sustainable environmental management.

The project set the target to promote Energy Efficiency/Renewable Energy technologies at rural areas and reduce the pressure on Forest Resources. To demonstrate the benefits of renewable Energy technologies, the project is supporting LEPL National Forestry Agency with the provision of solar power as a primary source of power while having diesel Generators as a back-up power source.

UNDP wishes to obtain quotations from qualified contractors with experience on provision of Solar Power. Activities will be carried out at Lagodekhi Municipality.

General Standards and Codes:

- 1) While performing installation works all safety requirements and fire prevention measures must be strictly adhered to.
- 2) All danger zones during installation works must be clearly outlined and warning signs placed at the limits of these zones.
- 3) All workers must be instructed about occupational safety and health, including fire prevention activities.
- 4) All means for fire prevention must be provided at the work site.
- 5) The storage of materials must be performed according to technological requirements.
- 6) All workers must be transported in line with occupational health and safety standards.
- 7) All materials must be transported safely and in line with environmental standards to avoid any risk of pollution.
- 8) All material must be obtained through legal and officially licensed channels.
- 9) When performing any kind of construction, installation and transportation, the technical safety requirements must be adhered to: SNIP III 4-80 "Safety Technic in Construction".
- 10) All workers must be registered, treated with dignity and respect, and punctually paid according to contractual agreements and in line with Georgian law.

The Bidder shall furnish the following certificates and warranties:

Certificates:

- ✓ Solar Panels European Origin Quality Certificate or the certificate which confirms the compliance with the European Standards with prefix En.
- ✓ Inverter European Origin Certificate or the certificate which confirms the compliance with the European Standards with prefix En
- ✓ KBE Solar or similar special solar cable European Origin Certificate or the certificate which confirms the compliance with the European Standards with prefix En

- ✓ Corrugated protection for solar cable European Origin Certificate or the certificate which confirms the compliance with the European Standards with prefix En
- ✓ Diesel generator European Origin Certificate or the certificate which confirms the compliance with the European Standards with prefix En
- ✓ Battery system European Origin Certificate or the certificate which confirms the compliance with the European Standards with prefix En

Warranties:

- ✓ Solar Panels Producer's warranty for 5 years; Supplier's warranty for 5 years.
- ✓ Inverter Producer's warranty for 5 years; Supplier's warranty for 5 years.
- ✓ Battery system Producer's warranty for 5 years; Supplier's warranty for 5 years.
- ✓ Mounting structure for solar panels in modular strings (Each module design for 10 panels) producer's warranty for 5 years; Supplier's warranty for 5 years.
- ✓ KBE Solar or similar special solar cable Producer's warranty for 5 years; Supplier's warranty for 5 years.
- ✓ Corrugated protection for solar cable Producer's warranty for 5 years; Supplier's warranty for 5 years.
- ✓ Diesel Generator Warranty for 2 years.
- ✓ Warranty for completed works for the smooth operation of Solar Power for the duration of 5 years.

Description of the climatic conditions of Lagodekhi Municipality

Latitude 41o 49′, longitude 46o 18′; Elevation above sea level 435 m; Climatic II b subregion; Average total solar radiation on the horizontal surface at 3,91 kWh / day / m2; Average total solar radiation on the vertical surface at 2,86 kWh / day / m2; According to European standard of heating: baseline heating temperatureof 18 oC; threshold temperature15,5 oC; HDD 15.5 =2421 degrees / day; Duration of heating season 212 days; Calculated heating temperature -8 oC, average temperature of the heating season 3,3 oC. Absolute minimum air temperature -23 C; Absolute HLCM-PN/UNDP RFQ – October 2020 14 maximum air temperature +38 C; Average annual air temperature +12.6 C; Highest wind speed of to 10 year period 24 m / s; Annual air relativity average humidity 72%; Snow cover weight 50 kg/m2; Annual rainfall amount 1076 mm. Will be used U value for zone 2. Normalized energy specific losses during heating season (kWh / m2): 25,9 from walls; 175,2 from windows; 17 from the roof; 19,4 from the overlap and 159 from the vertical window.

Installation of Solar Power at Lagodekhi Business Service Yard

The Business Service Yard in Lagodekhi Municipality should be powered by a constant power supply, which is represented by a solar power station working in a system with a diesel generator. Energy storage is provided by a battery housed in a special container which is equipped with aforementioned diesel generator and switchboard.

Outdoor lighting is provided by an autonomous solar lighting system equipped with a lithium battery.

The facility is powered by the low voltage main switchboard envisaged in the project. The total required power of the facility is 9,573 W; Installed power 11 975 W. The cross section of the power cable coming to the facility is taken conditionally. The incoming cable is connected to the main electrical distribution cabinet (DB).

Low voltage options are:

- 1. Operating voltage 380/220 V.
- 2. Frequency 50 Hz.
- 3. Grounding type TN-S with deaf grounded neutral.

Category 3 power supply is provided to a network of lighting and sockets; Heating and cooling systems and ventilation systems. Cable installation should be done in corrugated pipe.

This part of the project has been developed according to the following power supply standards:

Medium voltage switchgear meets the following standards:

IEC 62271-102 HV AC - Grounded Sockets' Standards

IEC 62271-100 HV AC - Automatic circuit breaker standards

IEC 60529 – Protection coefficient standards (Increase protection).

IEC 60186 - Voltage transformer standard.

Switchboards meet the following standards:

E 255-5-IEC664-1 -Insulation Inspection Standard

IEC255-CEI141-1 -metrological standard

IEC947-4-1 - Standard for check-in and output relays

Earthing and grounding sockets standard- IEC 60271-102

Note: The technical parameters of the supplied equipment can be adjusted by the supplier company in agreement with the customer so as not to worsen the starting terms of the project design.



The facility (BSY) is powered by the low voltage main switchboard.

Low voltage settings are:

- 1. Working voltages 380/220 V
- 2. Frequency 50 Hz
- 3. Grounding type TN-S with deaf grounded neutral.

Category 3 power is provided by a network of lighting and sockets; Heating and cooling systems and ventilation systems. Install the cable in the corrugated pipe.

This part of the project has been developed in accordance with the following power supply standards:

Medium voltage switchgear meets the following standards:

IEC 62271-102 HV AC - Earthen rosette standard

IEC 62271-100 HV AC - Automatic circuit breaker standards

IEC 60529 - Ingrease protection standards

IEC 601186 - Voltage transformer standard

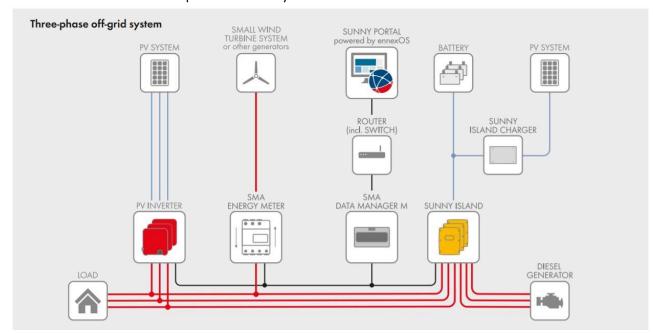
IEC947-4-1 - Standard for check-in and output relays Standard for earthing and earthing rosettes - IEC 60271-102

BSY's Power System Concept

Typical Solar Power Supply system for 'Off Grid' configuration consist of several major components:

- Solar Panels
- Charge controller(s)
- Inverter(s)
- Battery Bank
- Back-up Generator(s)
- Power Distribution System

Picture bellow shows the components of the system.

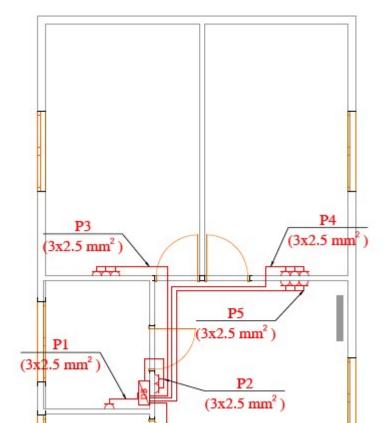


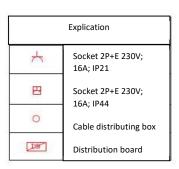
Installation of the Solar Panels, Charge Controllers, Inverter(s), Battery Bank and Back-up Generator(s) are major activities for Solar Power Supply system for 'Off Grid' configuration project implementation. Solar panels will be connected through Charge controllers directly to Battery Bank.

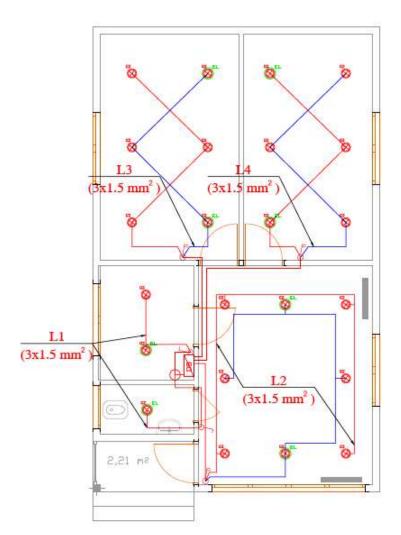
Charge controllers can be monitored remotely via GS

M network which can be arranged separately.

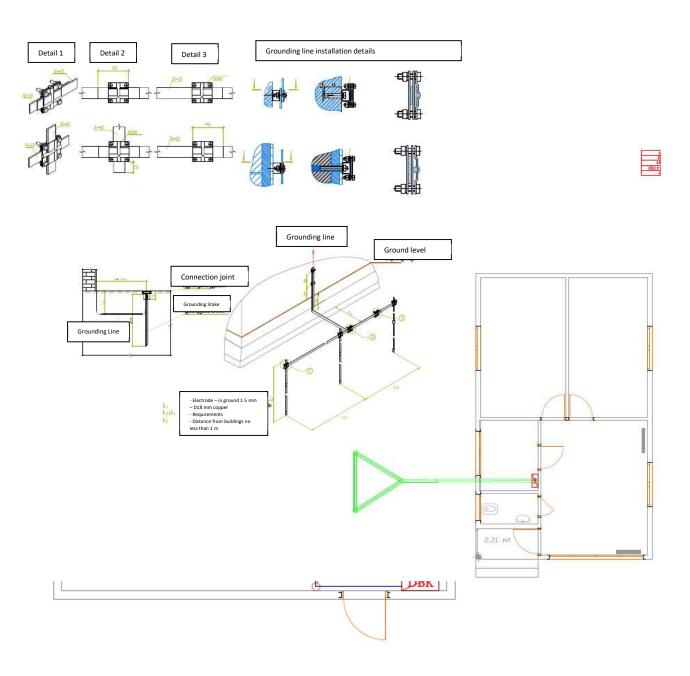
In addition, all electrical installations are to be performed as per drawings below:

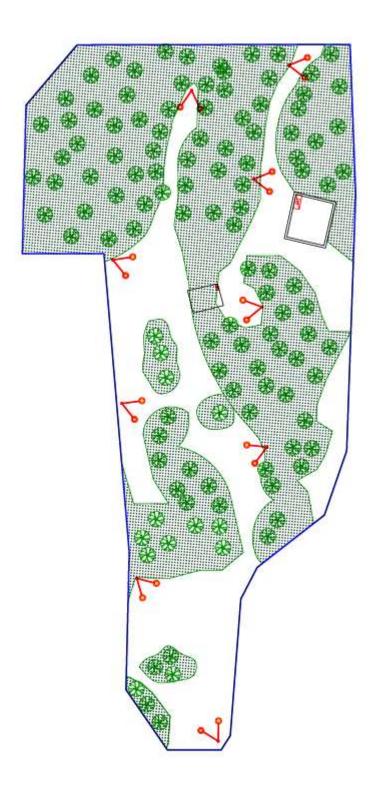


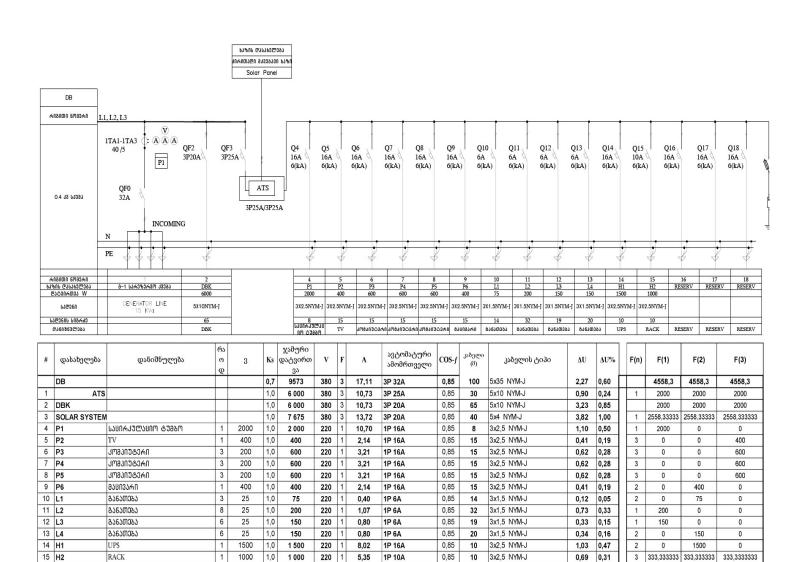




Explic	ation
8	Lighting 25W LED 3000k
O	Cable distributing box
DB	Distribution board
6	Single switch
8	Double Switch







1P 16A

1P 16A

1P 16A

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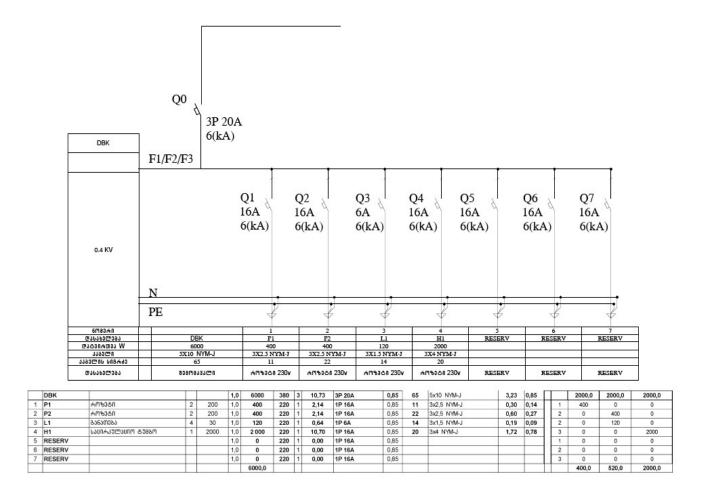
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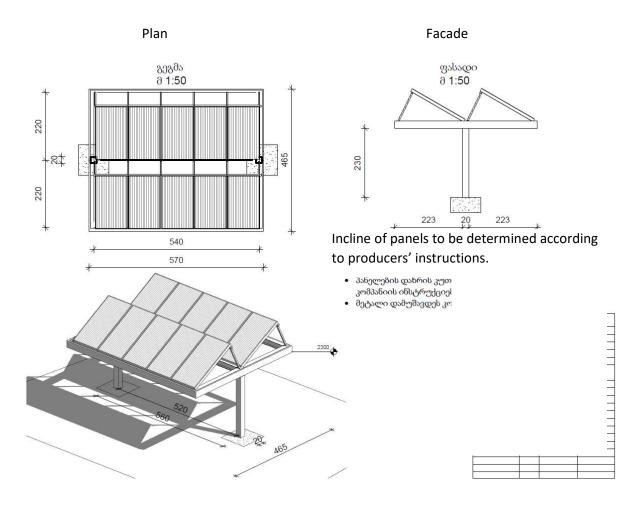


Solar panels with the common dimensions of 2.00 X 1.05mm and with capacity of 450Wp were chosen for simulation.

System consists of 4 kW solar power panels (10 pieces), non-wireless inverter, 4 kW lithium batteries and 15 kW generator.

BSY Solar System Computer Modelling.

Space on the land allows to install 1 unit of mounting structure where each can accommodate up to 10 pcs of standard 400W Solar Panels. Below picture provides drawing of mounting structure:



Charge Controllers Selection.

BSY's Battery Bank design consists of 0129213 (AXIstorage Li 10S - Lithium Ion) batteries with the following

Electrical Data	
	SMA
Nominal Capacity	10,0 kWh
Useable Capacity	8,0 kWh
Nominal Voltage	54,0 V
Nominal Capacity	186,3 Ah
Charging Power	up to 5 kW (90 A)
Discharging Power	up to 8,1 kW (150 A) + 300 A Peak (for 3 sec.)
Efficiency	up to 97% (at 25°C)
Cooling	active fan
Range of Temperature	0 - 50°C
Max. Air Humidity (not condensing)	85%
BMS (Battery Management System)	integrated

Mechanical Data

SMA

 Technology
 Lithium (NCA)

 H x W x D
 421 x 638 x 487 mm

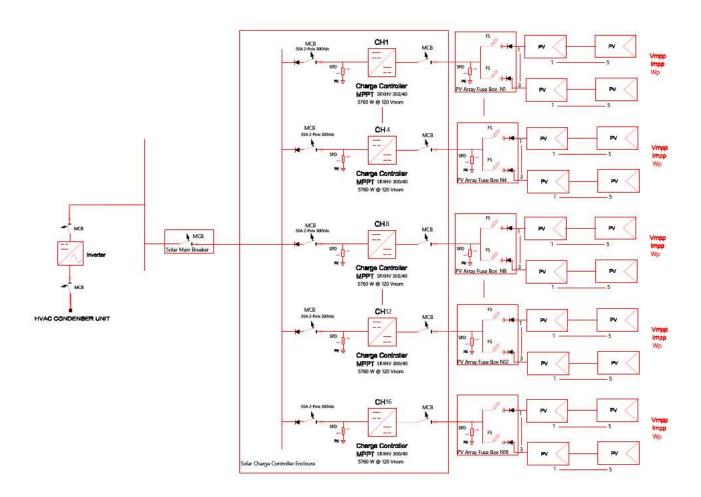
Weight 99 kg
Protection Category IP21
Certifications and Standards: CE + UN38.3

characteristics:

Charge Controllers (Sunny Island 4.4m) from German Manufacturer **Sunny** were selected during preliminary modelling. Technical data is given below.

Technical data	Sunny Island 4.4M	Sunny Island 6.0H	Sunny Island 8.0H
Operation on the utility grid or generator			
Rated grid voltage / AC voltage range		230 V / 172.5 V to 264.5 V	
Rated grid frequency / permitted frequency range		50 Hz / 40 Hz to 70 Hz	
Maximum AC current for increased self-consumption (grid operation)	14.5 A	20 A	26 A
Maximum AC power for increased self-consumption (grid operation)	3.3 kVA	4.6 kVA	6 kVA
Maximum AC input current	50 A	50 A	50 A
Maximum AC input power	11500 W	11500 W	11500 W
Stand-alone or emergency power operation			
Rated grid voltage / AC voltage range		230 V / 202 V to 253 V	
Rated frequency / frequency range (adjustable)		50 Hz / 45 Hz to 65 Hz	
Rated power (at Unom, fnom / 25°C / cos φ = 1)	3300 W	4600 W	6000 W
AC power at 25 °C for 30 min / 5 min / 3 sec		6000 W / 6800 W / 11000 W	
AC power at 45°C continuously	3000 W	3700 W	5430 W
Rated current / maximum output current (peak)	14.5 A / 60 A	20 A / 120 A	26 A / 120 A
Total harmonic distortion output voltage / power factor at rated power	< 5% / -1 to +1	< 1.5% / -1 to +1	< 1.5% / -1 to +1
Battery DC input			(0) ((1)) (0) (0)
Rated input voltage / DC voltage range	48 V / 41 V to 63 V	48 V / 41 V to 63 V	48 V / 41 V to 63 V
Maximum battery charging current / rated DC charging current / DC discharging current	75 A / 63 A /75 A	110 A / 90 A / 103 A	140 A / 115 A /130 A
Battery type / battery capacity (range)		Li-lon ¹⁾ , FLA, VRLA / 100 Ah to 10000 Ah (lead-acid 50 Ah to 10000 Ah (li-lon))
Charge control	IUoU charge proced	lure with automatic full charge an	d equalization charge
Efficiency / self-consumption of the device			
Maximum efficiency	95.5 %	95.8 %	95.8 %
No-load consumption / standby	18 W / 6.8 W	25.8 W / 6.5 W	25.8 W / 6.5 W
Protective devices (equipment)			
AC short-circuit / AC overload		•/•	
DC reverse polarity protection / DC fuse		-/-	
Overtemperature / battery deep discharge		•/•	
Overvoltage category as per IEC 60664-1		111	
General Data			
Dimensions (W / H /D)	467 mm / 612 mm	n / 242 mm (18.4 inches / 21.1	inches / 9.5 inches)
Weight	44 kg (97 lbs)	63 kg (138.9 lbs)	63 kg (138.9 lbs)
Operating temperature range	-	-25°C to +60°C (-13°F to +14	°F)
Protection class as per IEC 62103		T	
Climatic category as per IEC 60721		3K6	
Degree of protection according to IEC 60529		IP54	
RoHS-III compliant		•	
Features / function			
WLAN, Speedwire / Webconnect / SI-SYSCAN (Multicluster)	•/•/-	•/•/0	•/•/0
Direct connection to Sunny Portal via Webconnect			
Sunny Portal powered by ennexOS via Energy Meter powered by		•	
ennexOS or Data Manager M		0	
Micro SD memory card for extended data logging			
Display via smartphone, tablet, laptop / multifunction relay Three-phase systems (including rotating magnetic field) ²⁾ / battery-backup function		• / 2	
	*	•/•/•	
State of charge calculation / full charge / equalization charge Battery temperature sensor / data cables		0/•	
Certificates and approvals			
Cover color yellow / aluminum white		www.SMA-Solar.com	
		• / • 31	
Warranty 5/10 years For off-grid applications		-/-	
			100 11 1
Switching times for backup operation (without switch box or MC-Box) ⁴	-		/ 20 ms (low impedance)
Automatic rotating magnetic field detection / generator support		•/•	
Parallel connection / Multicluster	-/-	•/•	•/•
Integrated soft start		•	
Accessories			
For off-grid applications			
Multicluster boxes: MC-BOX-6.3 / MC-BOX-12.3 / MC-BOX-36.3		0	
Battery fuses			
Sunny Island Charger: SIC50-MPT ⁵ / SI Charger Piggy Back SIC-PB ⁵		0/0	
Data Manager M		0	
For on-grid applications			
Sunny Home Manager / SMA Energy Meter powered by ennexOS		0/0	
Sunny Home Manager / SMA Energy Meter powered by ennexOS Automatic transfer switch for battery backup ⁶⁾		0/0	
Sunny Home Manager / SMA Energy Meter powered by ennexOS			

Solar Panels and Charge Controllers Arrangement



ლაგოდეხის საქმიანი ეზოს მზის ენერგიით უზრუნველყოფა

ლაგოდეხის მუნიციპალიტეტის სოფელ მსხალგორში მდებარე მიწის ნაკვეთზე (საკ.კოდი 54.18.51.060) განთავსებულ სსიპ ეროვნული სატყეო სააგენტოს საქმიანი ეზოს და მასზედ არსებული საოფისე კოტეჯის ელექტროტექნიკური საჭიროებების უზრუნველყოფისთვის.

წარმოდგენილი პროექტი ითვალისწინებს შიდა ქსელის ელ. მომარაგებას.

ობიექტის ელ ენერგიით მომარაგება ხორციელდება უწყვეტი დენის წყაროთი, რომელიც წარმოდგენილია მზის ელ სადგურით მასთან ერთად სისტემაში ჩართულია დიზელ გენერატორი. ენერგიის შენახვა ხორციელება სპეციალურ კონტეინერში განთავსებულ ბატარეიბში. ამავე კონტეინერში ჩამონტაჟებულია დიზელგენერატორი და გამანაწილებელი ფარი. გარე განათება უზრუნველყოფილია ავტონომიური მზის სანათი სისტემით, რომელიც აღჭურვილია ლითიუმის ბატარეით.

ობიექტი იკვებება დაბალი ძაბვის მთავარ გამანაწილებელ ფარიდან, რომელიც გათვალისწინებულია პროექტში. ობიექტის სრული მოთხოვნილი სიმძლავრეა შეადგენს 9 573 W; დადგმული სიმძლავრე 11 975 W. ობიექტზე შემომავალი მკვებავი კაბელის კვეთი აღებულია პირობითად. შემომავალი კაბელი მეირთდება მთავარ გამანაწილებელ ელ კარადაზე DB-ზე დაბალი ძაბვის პარამეტრებია:

- 1. მუშა ძაბვები 380/220 V
- 2. სიხშირე 50 Hz.
- 3. დამიწების ტიპი TN-S ყრუდ დამიწებული ნეიტრალით.

მე-3 კატეგორიის კვებით უზრუნველყოფილია განათების და როზეტების ქსელი; გათბობა გაგრილების სისტემები და ვენტილაციის სისტემები. კაბელის მონტაჟი განხორციელდეს გოფრირებულ მილში.

პროექტის წინამდებარე ნაწილი დამუშავებულია ელექტრომომარაგების შემდეგი სტანდარტების მიხედვით:

საშუალო ძაბვის გამანაწილებელი ფარები შეესაბამება შემდეგ სტანდარტებს:

IEC 62271-102 HV AC -დამიწებიანი როზეტების სტანდარტები

IEC 62271-100 HV AC -ავტომატური ამომრთველების სტანდარტები

IEC 60529 -დაცვის კოეფიციენტის სტანდარტები (Increase protection).

IEC 60186 - ძაბვის ტრანსფორმატორის სტანდარტი.

გამანაწილებელი ფარები შეესაბამება შემდეგ სტანდარტებს:

E 255-5-IEC664-1 -იზოლაციის შემოწმების სტანდარტი

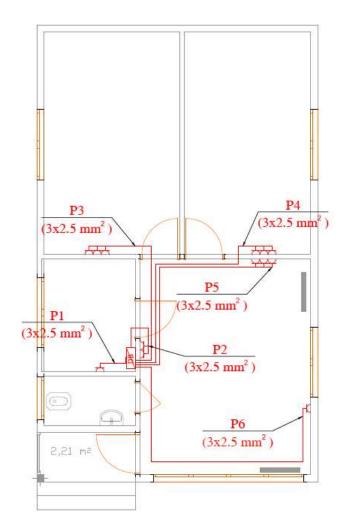
IEC255-CEI141-1 -მეტროლოგიური სტანდარტი

IEC947-4-1 - გამშვებების და გამავალი რელეების სტანდარტი

დამიწების და დამიწებიანი როზეტების სტანდარტი-IEC 60271-102

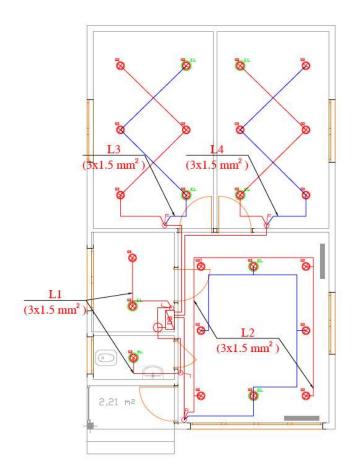
შენიშვნა: მოწოდებული აღჭურვილობის ტექნიკური პარმეტრები შეიძლება დაკორექტირდეს მომწოდებელი კომპანიის მიერ დამკვეთთან შეთანხმებით ისე რომ არ გაუარესდეს საპროექტო სასტარტო პირობები.

საროზეტო ქსელის სქემა

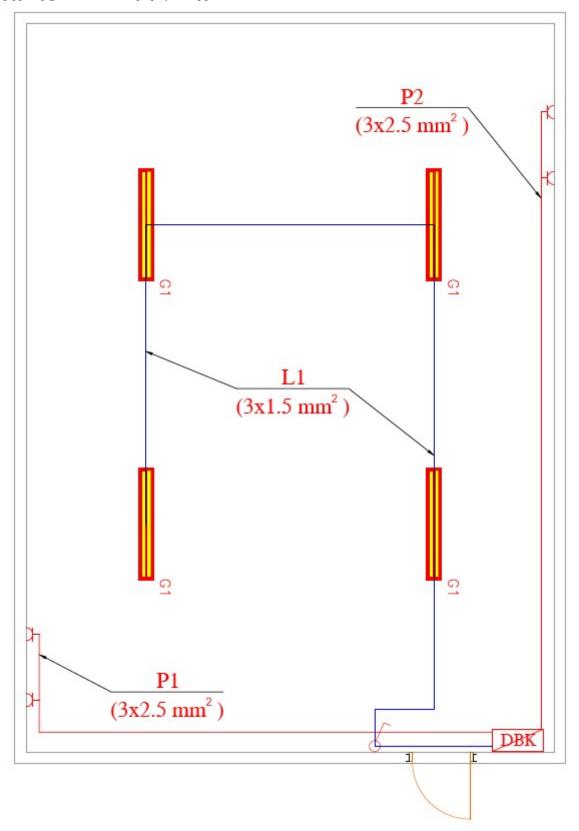


ᲔᲥᲡᲞᲚᲘᲙᲐᲪᲘᲐ						
4	ሐጣዔንሪብ 2P+E 230V; 16A; IP21					
	ሐጠቄያልበ 2P+E 230V; 16A; IP44					
0	83836360@0000@0 30@090					
D8	83836360@333@N 3343@3					

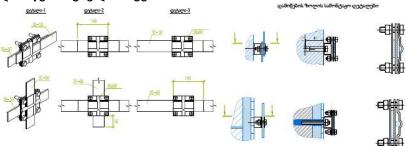
განათების ქსელის სქემა

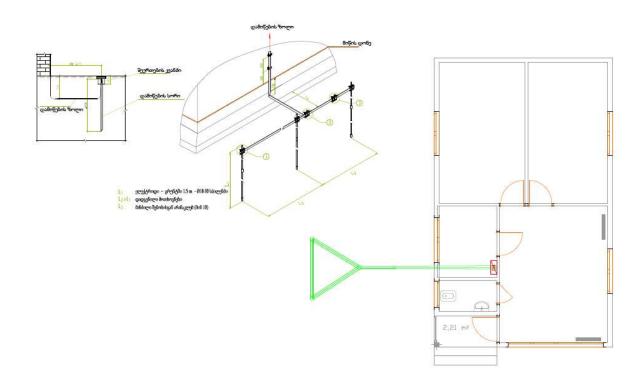


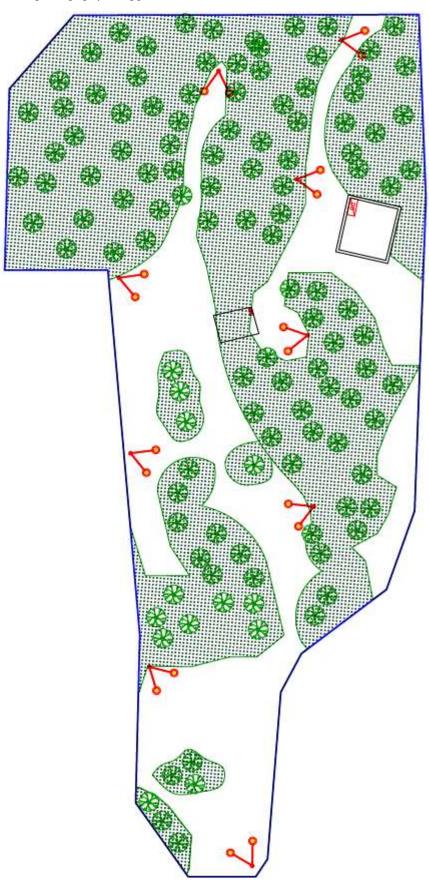
ᲔᲥᲡᲞᲚᲘᲙᲐሀᲘᲐ					
[∞] ⊗	სანათი წერტილოვანი 25W LED 3000K				
0	333163EN@333@N JM@M@N				
DB	გამანაწ ილეგელი კაგალა				
6	3A0001003311361 838A033001				
5	MWGUG770790 879W033G0				



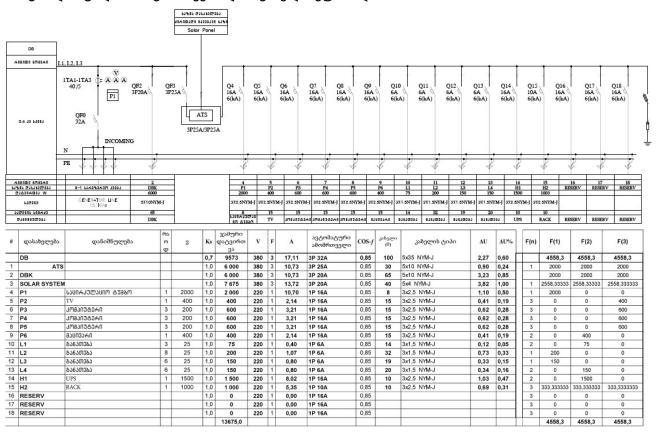
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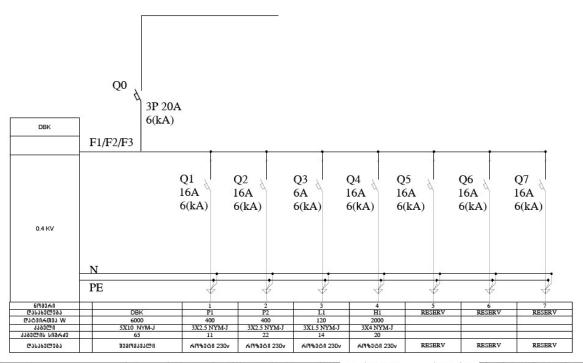




DB კარდის ცალ-ხაზოვანი სქემა და საკაბელო ჟურნალი

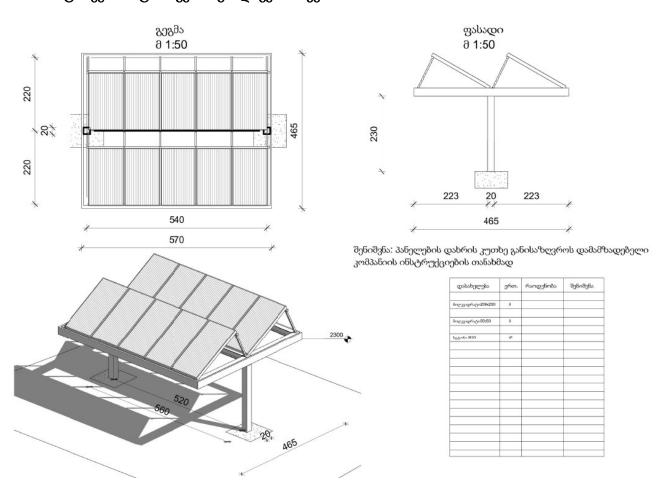


DBK კარდის ცალ-ხაზოვანი სქემა და საკაბელო ჟურნალი

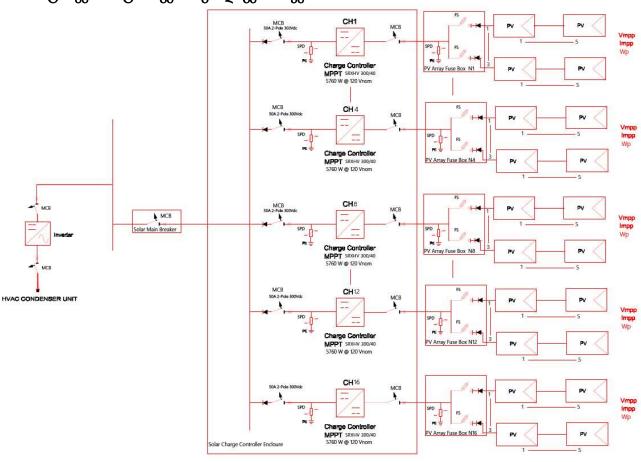


	DBK				1,0	6000	380	3	10,73	3P 20A	0,85	65	5x10 NYM-J	3,23	0,85		2000,0	2000,0	2000,0
1	P1	ക് ന്യാരി	2	200	1,0	400	220	1	2,14	1P 16A	0,85	11	3x2,5 NYM-J	0,30	0,14	1	400	0	0
2	P2	AM&ാരn	2	200	1,0	400	220	1	2,14	1P 16A	0,85	22	3x2,5 NYM-J	0,60	0,27	2	0	400	0
3	L1	856500385	4	30	1,0	120	220	1	0,64	1P 6A	0,85	14	3x1,5 NYM-J	0,19	0,09	2	0	120	0
4	H1	ᲡᲐᲪᲘᲠᲙᲣᲚᲐᲪᲘᲝ <u>Ტ</u> ᲣᲛᲑᲝ	1	2000	1,0	2 000	220	1	10,70	1P 16A	0,85	20	3x4 NYM-J	1,72	0,78	3	0	0	2000
5	RESERV				1,0	0	220	1	0,00	1P 16A	0,85			2		1	0	0	0
6	RESERV				1,0	0	220	1	0,00	1P 16A	0,85					2	0	0	0
7	RESERV				1,0	0	220	1	0,00	1P 16A	0,85					3	0	0	0
						6000,0											400,0	520,0	2000,0

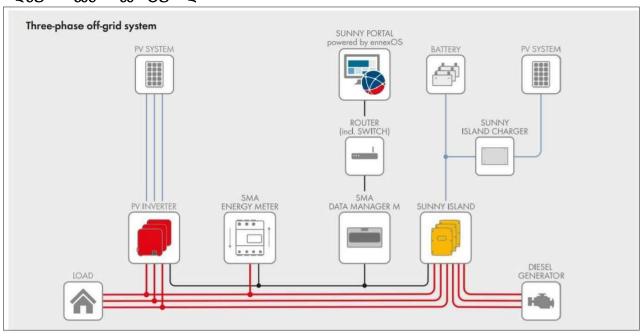
მზის ბატარეების სტრინგებში განლაგების სქემა



მზის ბატარეების სტრინგებში განლაგების სქემა



სადგურის გეგმა სქემატურად



ANNEX 2: QUOTATION SUBMISSION FORM

Bidders are requested to complete this form, including the Company Profile and Bidder's Declaration, sign it and return it as part of their quotation along with Annex 3: Technical and Financial Offer. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Name of Bidder:	Click or tap here to enter text.	
RFQ reference:	Click or tap here to enter text.	Date: Click or tap to enter a date.

Company Profile

Item Description	Detail
Legal name of bidder or Lead entity for JVs	Click or tap here to enter text.
Legal Address, City, Country	Click or tap here to enter text.
Website	Click or tap here to enter text.
Year of Registration	Click or tap here to enter text.
Legal structure	Choose an item.
Are you a UNGM registered vendor?	☐ Yes ☐ No If yes, insert UNGM Vendor Number
Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate):	☐ Yes ☐ No
Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? (If yes, provide a Copy of the valid Certificate):	☐ Yes ☐ No
Does your Company have a written Statement of its Environmental Policy? (If yes, provide a Copy)	☐ Yes ☐ No
Does your organization demonstrate significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable energies or membership of trade	☐ Yes ☐ No

institutions promoting such issues (If yes, provide a Copy)							
Is your company a member of the UN Global Compact		☐ Yes ☐ No					
Bank Information		Bank Name: Click or tap here to enter text. Bank Address: Click or tap here to enter text. IBAN: Click or tap here to enter text. SWIFT/BIC: Click or tap here to enter text.					
		Account Currency: Click or tap here to enter text. Bank Account Number: Click or tap here to enter text. Previous relevant experience: 3 contracts					
Name of previous contracts	Cont	& Reference tact Details ding e-mail	Contract Value	Period of activity	Types of activities undertaken		

Bidder's Declaration

Yes	No	
		Requirements and Terms and Conditions: I/We have read and fully understand the RFQ, including the RFQ Information and Data, Schedule of Requirements, the General Conditions of Contract, and any Special Conditions of Contract. I/we confirm that the Bidder agrees to be bound by them.
		I/We confirm that the Bidder has the necessary capacity, capability, and necessary licenses to fully meet or exceed the Requirements and will be available to deliver throughout the relevant Contract period.
		Ethics : In submitting this Quote I/we warrant that the bidder: has not entered into any improper, illegal, collusive or anti-competitive arrangements with any Competitor; has not directly or indirectly approached any representative of the Buyer (other than the Point of Contact) to lobby or solicit information in relation to the RFQ; has not attempted to influence, or provide any form of personal inducement, reward or benefit to any representative of the Buyer.
		I/We confirm to undertake not to engage in proscribed practices, , or any other unethical practice, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and we have read the United Nations Supplier Code of Conduct: https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct and acknowledge that it provides the minimum standards expected of suppliers to the UN.
		Conflict of interest: I/We warrant that the bidder has no actual, potential, or perceived Conflict of Interest in submitting this Quote or entering a Contract to deliver the Requirements. Where a Conflict of Interest arises during the RFQ process the bidder will report it immediately to the Procuring Organisation's Point of Contact.
		Prohibitions, Sanctions: I/We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium members or subcontractors or suppliers for any part of the contract is not under procurement prohibition by the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists and have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization.

Yes	No	
		Bankruptcy : I/We have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future.
		Offer Validity Period: I/We confirm that this Quote, including the price, remains open for acceptance for the Offer Validity.
		I/We understand and recognize that you are not bound to accept any Quotation you receive, and we certify that the goods offered in our Quotation are new and unused.
		By signing this declaration, the signatory below represents, warrants and agrees that he/she has been authorised by the Organization/s to make this declaration on its/their behalf.

Signature:	
Name:	Click or tap here to enter text.
Title:	Click or tap here to enter text.
Date:	Click or tap to enter a date.

ANNEX 3: TECHNICAL AND FINANCIAL OFFER - WORKS

Bidders are requested to complete this form, sign it and return it as part of their quotation along with Annex 2 Quotation Submission Form. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Name of Bidder:	Click or tap here to enter text.		
RFQ reference:	Click or tap here to enter text.	Date: Click or tap to enter a date.	

Technical Offer

Provide the following:

- a brief description of your qualification and capacity that is relevant to the Scope of Works;
- a brief method statement and implementation plan;
- team composition and CVs of key personnel

Description of Works სამუშაოთა აღწერილობა	UOM განზ ომი ლებ ა	Qty რაოდე ნობა	Unit Price ერთეული ს ღირებულ ება	Total Price ჯამური ღირებულე ბა
Lighting				
Lighting 25W LED	PCS	23.00		
Autonomous outside lighting set: Pole height 5m, solar element power 125W, LED light power 50W, solar charging time: 5-6 hours, lighting period 3-5 days, protection IP-65, color temperature 2000-4000 kelvin, lithium battery, 12.8W LED 100W 4000k, 5 m pole	PCS	2.00		
Light Switches and Sockets				
Single switch	PCS	2.00		
Double switch	PCS	3.00		
Cable distribution box	PCS	4.00		
Socket 230v 16a	PCS	13.00		
Cables				
Copper cable 5x35 mm2 (appr.)	m	100.00		
Copper cable 5x10 mm2	m	100.00		
Copper cable 5x4 mm2	m	40.00		
Copper cable 3x4 mm2	m	20.00		
Copper cable 3x2.5 mm2	m	160.00		

Copper cable 3x1.5 mm2	m	100.00
Corrugated pipe D32mm	m	40.00
Corrugated pipe D20mm	m	280.00
Installation Material	PCS	1.00
DB		
Plastic Power Board IP44 3X12	PCS	1.0
Automatic break 3P 32.00 A (6 kA)	PCS	1.0
Automatic break 3P 25.00 A (6kA)	PCS	2.0
Automatic break 3P 20.00 A (30mA)	PCS	1.0
Automatic break 1P 16.00 A (6kA)	PCS	10.0
Automatic break 1P 10.00 A (6kA)	PCS	1.0
Automatic break 1P 6.00 A (6kA)	PCS	4.0
Auxillary materials	Set	1.0
DBK		
Plastic Power Board IP44 2X12	PCS	1.00
Automatic break 3P 20.00 A (6 kA)	PCS	1.00
Automatic break 1P 16.00 A (6kA)	PCS	6.00
Automatic break 1P 6.00 A (6kA)	PCS	1.00
Auxillary materials	Set	1.00
Grounding contour		
Galvanized steel stake 1.5m 20D	PCS	3.00
Metal Line 3X35mm	m	18.00
Fixtures	PCS	6.00
Auxillary materials for installation	Set	1.00
Power Plant on Solar Energy		
Solar panels 450 Wp, 4 kW single crystal. 25 years (max. 20% productivity drop).	PCS	10.00
Inverter SMA Sunny Boy STP 10.0 TL INT BLUE three-phase or similar.	PCS	1.00
Battery system 4 kW power, kW three-phase Sunny Island or similar off-grid inverter, 1 OC, three-phase system 3x 0129213 (AXIstorage Li 10S - Lithium Ion)	Set	1.00

3x 0130063 (Sunny Island 4.4M-13 alu-white or similar)				
6x 0125555 (guard 100A gG)				
3x 0125119 (Y-adapter for parallel connection of batteries)				
2x 0125120 (RJ45- for parallel circuit)				
2x 0125120 (KJ45-101 parallel circuit) 2x 0125121 (network cable RJ45)				
, ,				
1x 0125122 (network cable RJ45)				
3x 0125539 (Cables to connect batteries to inverter)				
Technical Room (in mobile container that accomodates				
battery bank and 15 kW diesel generator)	Set	1.00		
Mounting structure for solar panels in modular strings				
(concrete pier foundation). Each module design for 10				
panels.	Set	1.00		
KBE Solar or similar special solar cable 6mm2, MC4				
Connectors. Ammount is approximate (to be determined				
after installation).	m	400.00		
Corrugated protection for solar cable	m	400.00		
AC power box with automatic break	PCS	1.00		
Diesel generator with automated controls. 15 kW, 3-phase	PCS	1.00		
Transportation cost for the devices and the materials				
Installation costs				
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Compliance with Requirements

	You Responses			
	Yes, we will comply	No, we cannot comply	If you cannot comply, pls. indicate counter - offer	
Validity of Quotation (90 days)			Click or tap here to enter text.	
Payment terms			Click or tap here to enter text.	
Quality Certificates			Click or tap here to enter text.	
Warranties			Click or tap here to enter text.	

I, the undersigned, certify that I am duly authorized to sign this quotation and bind the company below in event that the quotation is accepted.			
Exact name and address of company	Authorized Signature:		
Company NameClick or tap here to enter text.	Date:Click or tap here to enter text.		
Address: Click or tap here to enter text.	Name:Click or tap here to enter text.		
Click or tap here to enter text.	Functional Title of Authorised		

Phone No.:Click or tap here to enter text.	Signatory:Click or tap here to enter text.
Email Address:Click or tap here to enter text.	Email Address: Click or tap here to enter text.