

Job Specification for

Grid Tied Solar Powered Husking Machine

Type of the Job: Quotation for Supplying Grid Tied Solar Powered Husking Machine. (Supplied as per Specifications.)

Deliverables: Grid Tied Solar Powered Husking Machine. All deliverables must be reached at Practical Action, Field Area Paikgacha/Koyra, Khulna.

Quotation submission deadline: 28 February 2024

WHO WE ARE

We are an international development organisation putting ingenious ideas to work so people in poverty can change their world.

We help people find solutions to some of the world's toughest problems. Challenges made worse by catastrophic climate change and persistent gender inequality. We work with communities to develop ingenious, lasting and locally owned solutions for agriculture, water and waste management, climate resilience and clean energy. And we share what works with others, so answers that start small can grow big.

We're a global change-making group of problem solvers, knowledge mobilisers and expert advisors. We work together to multiply our impact and help shape a world that works better for everyone. The group consists of a UK registered charity with community projects in Africa, Asia and Latin America, an independent development publishing company and a technical consulting service.

We believe in the power of small to change the big picture. And that together we can take practical action to build futures free from poverty.

Background and purpose of the assignment:

Background

Practical Action is an innovative international development organization that puts ingenious ideas to work to change the lives of people living in poverty. We help people find solutions to some of the world's toughest problems, namely catastrophic climate change, and persistent gender inequality. Our modality is that to start small can grow big and bring people together in bold collaborations, combining knowledge with innovation to change the systems that keep people poor and vulnerable. We partner with communities to develop ingenious solutions for water and waste management, agriculture, climate resilience, and access to clean energy. We then share what has been proven to work with others so that many more people can change their world and we also believe in the power of small to change the big picture.

The UK Foreign, Commonwealth and Development Office (FCDO) has selected a CARE Bangladesh led consortium to implement the project titled 'Nature Based Adaptation towards

Prosperous and Adept Lives & Livelihoods in Bangladesh (NABAPALLAB/ নবপল্লব)' in two Ecologically Critical Areas (ECA) – Sundarbans and Hakaluki Haor. The other consortium members are CNRS, CordAid, C3ER-BRAC University, Dushtha Shasthya Kendra (DSK), Friendship, Humanity & Inclusion (HI), iDE, and Practical Action. It is a key component of the Bangladesh-UK Accord on Climate Change and will deliver the adaptation outcome of the FCDO's flagship Bangladesh Climate and Environment Programme (BCEP). The programme will make a significant contribution in Bangladesh to progress against GoB's policies and priorities e.g., National Adaptation Plan (NAP), Nationally Determined Contribution (NDC), commitments to biodiversity conservation, ongoing 8th Five Year Plan, etc. And it will also contribute to UK's commitment to International Climate Finance (ICF).

One of the components of the project is to facilitate Solar Home System. The system will support the energy required for the households. The solar panel will be mounted in the household's premises and the system will be connected with electricity line, if the house has no electricity connection, then it will be separated.

Hence, we are inviting suitable vendor/company to submit a plan and associated quotation to complete procurement, transport, and installation of the Solar home system.

KEY DELIVERABLES & DETAIL SPECIFICATIONS

The selected vendor must provide the following deliverables:

Grid Tied Solar Powered Husking Machine						
Sl. No	Articles	Specifications	Unit	Quantity in Meter	Price / Unit (BDT)	Total Price (BDT)
1	Solar panel		watt	6000		
2	Panel Structure, Cabinet		Watt	6000		
3	Grid-Tied Inverter -2.5KW		Unit	1		
4	Bi directional Energy meter		Unit	1		
5	Cabling (DC & AC),		Set	1		
6	System Transport		Set	1		
	Total price without VAT & Tax					
	VAT					
	Tax					
	Total price including VAT & Tax					

Technical Specification of Grid Tied Solar Powered Husking Machine	
Items	Description
Main Components of SHS:	Solar panel, mounting structure, Grid Tied Inverter, Cabling and Electric Safety Gadgets
Connected Load	3 HP Induction Motor
Daily Avg. operating hours	6-7 Hrs.

System Output Voltage	220 V AC
Average Hrs. of Peak Sun	3.5- 4. 5 for Bangladesh
Proposed System Design	Grid Tied Solar System with Net metering facilities
Solar PV Size	6 kW
	<ul style="list-style-type: none"> • Cell Type: Mono/Poly Crystalline, “A” Grade Cell. • Efficiency above 20% • BDS IEC 61215- It covers aspects such as construction, electrical characteristics, performance testing, and safety requirements for PV modules. • BDS IEC 61730-1:2019- Safety qualifications/Over voltage Testing • BDS IEC 61730-2:2019- Module Safety Qualifications • The photovoltaic module should have a peak power output of at least 400 Wp. • Module Efficiency (η %) should be minimum 22% at STC and. Fill Factor (FF) should be more than 70% • Minimum Twelve (12) year PV module warranty
Mounting Structure	<ul style="list-style-type: none"> • Hot dip galvanized (thickness of 120 microns) MS with 2-3mm thickness and hollow pole of 2-3 mm thickness and 3-4 inches of diameter or Anodized aluminum • Bolts, nuts, fasteners, panel mounting clamps. • Mounting directly on the sheet metal, ensuring stability and wind withstanding capacity. • Mounting directly on the sheet metal, ensuring stability and wind-withstanding capacity
Bi-Directional Smart Energy Meter	Energy meter model should have approval from Local Power Distribution Company
Inverter with Power Conditioning Unit (PCU)	2.5 KW, 1 Unit
	<ul style="list-style-type: none"> • BDS/IEC 62109-1- General Safety requirements of power converters for use in photovoltaic power system • BDS/IEC 62109-2- Particular Safety requirements for inverter use in photovoltaic power system • IEC 61727:2004- Characteristics of the Utility interface • IEC 62116:2014- Utility interconnected PV inverter- Test procedure of islanding prevention • Power factor at rated power > 0.95 • Maximum efficiency \geq 95.5% • Ground fault monitoring Must be available DC reverse polarity protection • Must be available AC short circuit current protection • Must be available Degree of protection IP 65 or above • Operative ambient temperature range -20°C to 60°C • Total harmonic distortion (THD) < 3% • Maximum relative humidity 100% • Communication Must be available Data access Voltage, current, power, frequency and other basic information must be accessible • Warranty: Minimum of 3 years from manufacturer.
Cables	As Required

	<ul style="list-style-type: none"> • Electrical cables for photovoltaic systems with a voltage rating of 1.5kV DC. • AC cable must comply with national standards. • Cable rating, size, and length must be as per system design requirement and verified • Length and size of the cables shall be selected to keep the voltage drop (power loss) of the system minimum. The maximum allowable voltage drop is 2.5% from the panel up to the inverter end. • Cable must be compatible up to the life of the solar PV modules. • DC PV module cables must be: - Suitable for a wide temperature range (e.g., -40 to 100°C) - Single core and double insulated in general
Electric Safety gadget	Ensure AC & DC Circuit Breakers to ensure fire Hazards and Electric safety measures.
Others Requirements	<ul style="list-style-type: none"> • Ensure the installation of the Solar PV for optimal position, direction, inclination, and shading avoidance. • Test all loads to ensure proper operation. • Record all measurements in the installation log. • Provide a thorough explanation to the user on system operating principles, load management requirements, shading impact on array performance, user maintenance checks, and how to conduct them. • Recommend an annual maintenance schedule with detailed instructions.

DEADLINE

The items have to be delivered to under Practical Action. All deliverables must be reached at Practical Action, Field Area Paikgacha/Koyra, Khulna, by March 25, 2023

ROLE OF PRACTICAL ACTION

- Practical Action will provide the technical details with the work order.
- Practical Action will provide all necessary support, directions, and suggestions to the awarded vendor/company in order to complete the tasks mentioned.
- Practical Action will not pay any extra payment to the vendor/company in case of any loss and damage happened.
- Practical Action holds the authority to take any decision at any stage or moment in the work process.

ROLE OF THE AGENCY

- The vendor/company is responsible to deliver all the deliverables above mentioned address.
- The vendor/company has to change the tasks as mentioned in above until the satisfactory output comes.

- The vendor will ensure 6 months after sales service which will be counted after installation of boom into the river.

EXCLUSIVITY

The vendor cannot share the concept, methodology, content, raw artworks and the final products with any other party anywhere in the world during at any time, without written consent from Practical Action.

OWNERSHIP AND COPYRIGHT

Practical Action will own the copyright of all the documents/ products/ materials (in full and every single component) to be generated from this assignment and will preserve the right to share it, if required, with any other party as it might find appropriate. Organisations might be allowed to use these products only for non-commercial purpose, subject to written approval from Practical Action.

Safeguarding policy and Code of Contact

- Practical Action firmly believes that no person, regardless of age, gender identity, disability, sexual orientation or ethnic origin or any other personal characteristic, should experience harm, including sexual exploitation or abuse, and Practical Action takes seriously its responsibility to safeguard those who come in contact with our work. Practical Action is committed to raising awareness of safeguarding risks and to taking measures to minimize those risks.
- All employees, trustees, volunteers, consultants, partners and others acting on behalf of Practical Action are expected to behave in ways that safeguard others from harm, sexual exploitation and abuse. This includes evaluation consultants and their team members.
- If anyone acting on behalf of Practical Action, including evaluation consultants and their team members, develops concerns or suspicions regarding harm, sexual exploitation or abuse by a Practical Action employee or anyone acting on our behalf they must report their concerns via the established reporting procedures. Individuals do not need to have, nor should they seek to obtain, evidence to support their concerns – the individual's duty is to report their concerns so that Practical Action can investigate appropriately.
- Practical Action's **Safeguarding Policy** is available online here. All consultants and their team members acting on behalf of Practical Action are required to familiarise themselves with this policy and print and sign the policy declaration form at the end. This must be returned to Practical Action before commencing any work on this assignment.
- Practical Action also has a **Code of Conduct**. All consultants and their team members are expected to read, print, sign and return this before commencing any work on this assignment, available here.
- Practical Action's **Safeguarding Focal Points** are available to answers any questions about this policy, the Code of Conduct and their contents. They are also

available to support with briefing of consultancy team members as required prior to commencing field work.

Application and submission procedure:

All interested vendor/company are requested to submit a quotation (including VAT and TAX) with the details company profiles including reference of relevant work experience, relevant experience including activities and milestones, BIN, TIN certificate, budget details, time frame and contact details.

Electronic copy of the quotations with budget details duly signed should be submitted to: procurement.bd@practicalaction.org.bd with the subject line: “Grid Tied Solar Powered Husking Machine.” by no later than **28 February 2024**.

Deliverables and timeline

Sl	Details	Timeline
1	Quotation submission	28 Feb’24
2	Quotation review and CS	03 March’24
3	Work order issuance/contract signing	06 March’24
4	Grid Tied Solar Powered Husking Machine at the project locations and invoice submission	25 Mar’24

Terms of Payment for the vendor/company:

The payment will be made upon satisfactory completion of services. The release of funds will be made in three instalments:

- 25% upon signing the contract.
- 30% after submission and acceptance of a complete set of deliverables e.g., the final delivery of the equipment to the site (Faridpur)
- 45% after installation the equipment into the river.

Note: Tax and VAT will be deducted at source from the bills payable to the selected vendor.

Resignation and cancellation/termination of contract:

Penalty Clause – in case of unauthorised delays in the submission of the document, a 2% penalty will be deducted from the total payment for each day delayed. The selected firm/team must pay back the total amount of the advance money if it fails to submit agreed deliverables

and/or withdraws from the contract. The selected vendor/company must notice Practical Action, in writing, if it needs to extend the submission date.

Practical Action in Bangladesh reserves the right to cancel, amend, and defer the contract agreement.

Our

STANDARD TERMS AND CONDITIONS

Practical Action practices the following terms and conditions stated below applicable to signing any contract with external agencies/consultants:

- *All project records and copies of records, data sets, electronic data and photocopies, etc., which the organization remains for the successful execution of the assignment, shall remain the exclusive properties of Practical Action;*
- *During the period of the Agreement or afterwards, the organization shall not issue any written material or express public or personal opinions concerning the services under the Agreement to parties outside except with the prior written approval of Practical Action;*
- *The organization assumes all responsibility for complying with local legal codes as they apply to an Agreement and work performed there under. In addition, the organization shall be liable to pay all applicable taxes and fees as required by the laws of Bangladesh. Practical Action will deduct Income Tax and VAT at source as per Govt. rules;*
- *The organization shall not without first obtaining the consent in writing of Practical Action, permit any of its duties or obligations made under the Agreement to be performed or carried out by any other person, or reassign his/her interest in the Agreement;*
- *In the event that the organization requires additional time to complete the Agreement, over and above that previously agreed to, without Practical Action changing the scope of the Agreement, Practical Action's prior written concurrence to the same is necessary in order to charge Practical Action for Agreement expenses incurred during an Agreement extension;*
- *However, Practical Action may, by written order, make general changes within the scope of the Agreement affecting the services to be performed or the time of performance. If any such changes cause an increase or decrease in the cost of, or time required for performance of, any part of the work under the Agreement, Practical Action shall make an equitable adjustment in the Agreement price, the delivery schedule, or both, and shall modify the Agreement in writing accordingly;*
- *The organization may communicate with parties external to Practical Action through and with prior intimation to Practical Action, while performing services under the Agreement;*
- *Notwithstanding anything contained in the Agreement or in these conditions Practical Action may at any time by notice in writing terminate the Agreement in whole or in part by requiring the organization to stop performing the work or any part thereof, in which event the organization shall have no claim against Practical Action by reason of such termination other than payment of expenses actually incurred by the organization plus a fair and reasonable fee to be in proportion to the work performed under the Agreement, less any sum previously paid on account thereof. However, if the Agreement is cancelled by Practical Action due to negligence on the part of the organization, termination expenses shall be borne by him. In this later case, Practical Action's independent determination of negligence on the part of the organization shall be considered to be final and non-negotiable;*
- *The organization shall not hold Practical Action liable for any accident or misadventure befalling them whilst on duty or pursuing activities to fulfil the Agreement;*

- *Practical Action reserves right to accept and reject any proposal without assigning any verbal and or written rationale whatsoever; Practical Action reserves the right to monitor the quality and progress of the work during assignment;*
- *Further items/tasks might be incorporated by Practical Action and in such case, budget will be revised accordingly;*
- *Payments will be made by account payee cheque or bank transfer in the name of the organization or individual as per the contract.*

Sign:	Sign:	Sign:	Sign
Shamim Ahmed	Salim Moral	Tazeen Hossain	Shawkat Ara Begum
TA -Aquaculture	Programme Manager	Head of Programme	Country Director
NABAPALLAB	NABAPALLAB	Delivery and Operations	Practical Action.