



BANGLADESH ORDNANCE FACTORIES (BOF)
Gazipur Cantonment, Gazipur 1703.

INVITATION FOR EXPRESSION OF INTEREST (EOI)

1. BOF is interested to undertake various projects to establish various production line/plant. Details of the projects are given in the website (www.bof.gov.bd/projects2019)

<u>Ser.</u>	<u>Project Name</u>
a.	Establishment of Magazine Production Line.
b.	Establishment of Oxidation Line.
c.	Establishment of Electro/Chrome plating Line.
d.	Establishment of TNT Refurbishment Plant.
e.	Establishment of Powder Metallurgy Plant.

2. Deadline for Expression of Interest (EOI) submission 05 September 2019.

REQUEST FOR EXPRESSION OF INTEREST (EOI) OF ESTABLISHMENT OF MAGAZINE PRODUCTION LINE

SL	Name	Description	Rmk
1.	Agency /Procurement Entity Name	Bangladesh Ordnance Factories (BOF)	
2.	Budget and source of funds	BOF Government Budget (MOD)	
3.	Project Name	Establishment of Magazine Production Line	
4.	EOI Closing date and time	05 September 2019	
5.	Description and address of official inviting EOI	Bangladesh Ordnance Factories (BOF). Gazipur Cantt. Gazipur 1703	
6.	Contact details of Official Inviting EOI	Deputy Director Planning Wing BOF, Gazipur Cantonment. Gazipur 1703 Telephone.: 9204613 Ext 4052 E-mail: ddplgbof@yahoo.com Mobile: 01769044052	
7.	The client reserves the right to reject all EOIs	Yes.	
8.	Brief description of Projects:		

A complete production line for the production of multi-types of magazines to be used with the weapons produced by Bangladesh Ordnance Factories (BOF) will be established with required number of machines/ equipment and other accessories. Details of the Line are as bellows:

SI No	Item	Requirements
a.	(1) Type and Capacity of the Line	(a) Must be capable of Producing 30 ~ 90 round (ammunition 7.62 x39 mm) stack-type detachable Magazines for Rifles at the rate of 300 pieces (minimum) per day (08 working hours) (b) Must be capable of Producing 75 ~ 100-round (ammunition 7.62 x39 mm) Drum-type detachable magazines for Light Machine Gun (LMG) at the rate of 110 pieces (minimum) per day (08 working hours)
b.	(2) Machines/ equipment and other accessories	Required number of machines/equipment and other accessories for the line must be supplied, installed and carried out trial run
c.	(3) Die/punch/fixture/tools /cutter/ gauge etc.	Necessary dies/punches/fixtures/tools/cutters/gauges etc. must be supplied for the production of minimum 2,40,000 (3x80,000) Stack-type (Rifle) and 90,000 (3x30,000) Drum-type (LMG) magazines for the weapons produced by BOF
d.	(4) Conditions:	(a) The line must be capable of producing multi-types of magazines suitable for fitting and operating with the weapons produced by Bangladesh Ordnance Factories (BOF) (b) The production rate of magazine must be high using as minimum number of machines and manpower as possible (c) Carbon Steel will be used as Raw Material for the production of all types of magazines (d) Country of origin of all the equipment/machines and other accessories to be used for the line must be of group 'A' country (e) If any press machine is used, the number of machines must be minimum. (f) If any spot welding is necessary then all spot welding has to be done at one point/location and it has to be done by Robotic hand (g) All dies must be progressive dies.

REQUEST FOR EXPRESSION OF INTEREST (EOI) OF ESTABLISHMENT OF OXIDATION LINE

SL	Name	Description	Remarks
1.	Agency / Procurement Entity Name	Bangladesh Ordnance Factories (BOF)	
2.	Budget and source of funds	BOF Government Budget (MOD)	
3.	Project Name	Establishment of Oxidation Line	
4.	EOI Closing date and time	05 September 2019	
5.	Description and address of official inviting EOI	Bangladesh Ordnance Factories (BOF). Gazipur Cantt. Gazipur 1703	
6.	Contact details of Official Inviting EOI	Deputy Director Planning Wing BOF, Gazipur Cantonment. Gazipur 1703 Telephone.: 9204613 Ext 4052 E-mail: ddplgbof@yahoo.com Mobile: 01769044052	
7.	The client reserves the right to reject all EOIs	Yes.	
8.	Brief description of Projects:		

a.	Qty	02 (Two) Sets
b.	Specification:	
	(1)Purpose	Automation of existing Oxidation Plant by Incorporation of PLC based Controls System.
	(2) Tank (Existing)	Mat: SS (all tanks), Total Qty: 24, each line 12 tanks.
	(3)Number of lines	02 (two)
	(4)Over head crane	Qty: 10 Nos.Capacity: 500 kg, Power supply: 3 Phase, 380V AC, 50Hz
	(5)Control system	Siemens Simatic S7 12000 series PLC with necessary I/O cards
	(6)Requirements	(a) Time and temperature auto calculation with compensation time. (b) Alarm system both for completion of task or any kinds of faults/difficulties. (c) Automatic loading/unloading system. (d) The following instruments must be supplied: (i) Conductivity sensors, for measuring ion density (ii) Temperature sensors (iii) Float type level sensors (iv) Specific gravity sensors (v) Solenoid valves for controlling the flow of liquid (vi) Speed control & positioning drive (e) Induced & forced draft fume exhaustion system to be incorporated with the plant. (f) ETP system incorporated with the plant and internal arrangement must be done in such a way so that it matches with the future ETP plant.

		<p>(g) Preview or simulation of the system must be shown on the monitor.</p> <p>(h) Modern lighting system.</p> <p>(i) Operating voltage, current and other relevant information must be displayed on the monitor.</p>
c.	Condition:	<p>(1) The oxidation plant must be capable to support a variety of standard processes including oxidation, degreasing, pickling (Need separate arrangement), oil dipping and drying.</p> <p>(2) The plant capacity will be 150 ton per annum.</p> <p>(3) Main control has to be executed from a control panel and Visualization will have to be done on a PC in the floor level.</p> <p>(4) The plant will consist of 2 (two) lines. Necessary Civil, Mechanical & Electrical works will be done by BOF. Supplier has to provide detail guideline.</p> <p>(5) There should be 05 (five) cranes in a lot.</p> <p>(6)The Plant installation, trial run and operational with maintenance in house training is to be provided by the supplier. The duration of training should be at least 07 (seven) days.</p> <p>(7) 01 x Operators manual and programming manual in English must be supplied by the supplier.</p> <p>(8)01x Maintenance/Repair manual in English (including electrical/electronic circuit diagram, mechanical drawing etc) must be supplied by the supplier.</p> <p>(9)The supplier should give service support for minimum 05 (five) years after installation of the plant.</p> <p>(10) Performance test shall be carried out by the supplier at BOF. The plant has to be fully assembled and erected for this purpose.</p> <p>(11)Operations, calibration & application software manual and detail design, drawing and electric circuit diagram must be supplied by the supplier.</p> <p>(12)The plant shall have warranty for a minimum period of 12 months after commissioning for defect free operation and specified accuracies at BOF site.</p> <p>(13)Any defect observed during the warranty period shall be replaced/repaired free of cost with minimum down time.</p>
e.	Country of Origin/ Assembly/ Shipment	Any Country

REQUEST FOR EXPRESSION OF INTEREST (EOI) OF ESTABLISHMENT OF ELECTRO/CHROME PLATING LINE

SL	Name	Description	Remarks
1.	Agency / Procurement Entity Name	Bangladesh Ordnance Factories (BOF)	
2.	Budget and source of funds	BOF Government Budget (MOD	
3.	Project Name	Establishment of Electro/Chrome Plating Line.	
4.	EOI Closing date and time	05 September 2019	
5.	Description and address of official inviting EOI	Bangladesh Ordnance Factories (BOF). Gazipur Cantt. Gazipur 1703	
6.	Contact details of Official Inviting EOI	Deputy Director Planning Wing BOF, Gazipur Cantonment. Gazipur 1703 Telephone.: 9204613 Ext 4052 E-mail: ddplgbof@yahoo.com Mobile: 01769044052	
7.	The client reserves the right to reject all EOIs	Yes	
8.	Brief description of Projects		

a.	Qty	01 (One)
Specifications:		
b.	(1)Purpose	Supply and Installation of PLC Based Automated Chrome Plating line in order to carry out Chromium,Copper,Silver, Nickel and Gold Electro plating of different types of small arms &others components.
	(2) Number of lines	04
	(3) Tank	Mat: Casted PVC/PP(all tanks), Total Qty: 47
	(a) Mortar gun barrel and rifle barrel line (Total Tank: 13)	<u>Plating tank</u> Qty: 04, Size: 50"x30"x44" Qty: 01, Size: 50"x30"x64" <u>Cold water tank</u> Qty: 06, Size : 30"x40"x44" <u>Hot water tank</u> Qty: 01, Size : 30"x40"x44" <u>Degrease tank</u> Qty: 01, Size : 55"x25"x44"
	(b) Piston and gas regulator line , (Total tank: 13)	<u>Plating tank</u> Qty: 02, 70" x 32" x 36" <u>Plating tank</u> Qty: 02, Size: 50"x30"x44" <u>Plating tank</u> Qty: 01, 21"x21"x41" <u>Hot water tank</u> Qty: 01, Size : 30"x40"x44" <u>Cold water tank</u> Qty: 06, Size : 25" x 35 "x44" <u>Degrease tank</u> Qty: 01, Size : 55"x25"x44"

		(c) Rear sight knob, locking knob, bayonet body and die (Total tank: 13)	Plating tank Qty: 01, Size: 41" x 29" x 36" Qty: 01, Size: 58" x 31" x 36" Qty: 01, Size: 50" x 30" x 44"
			Cold water tank Qty: 05, Size : 25" x 35 "x44"
			Plating remove tank Qty: 01, Size: 20" x 20" x 44"
			Neutralizing tank Qty: 01 ,Size: 27" x 24" x 44"
			Anti rust tank Qty: 01 ,Size : 30"x20"x44"
			Distilled water tank Qty: 01, Size : 40"x36"x26"
			Copper remove tank Qty: 01, Size: 21"x21"x44"
		(d) Other Plating line (Total: tank 08)	Plating tank Qty: 04, Size: 40" x 30" x 44"
			Cold water tank Qty: 04, Size : 25" x 35 "x44"
		(4) Rectifier 1500 Amp	Qty 15
Specification:			
(a) Input voltage	3 Phase, 380 V/420 V, 50 Hz		
(b) Output voltage	12 V		
(c) Output current	0~1500 A (Random Optional)		
(d) Voltage stability	≤1%		
(e) Current stability	≤1%		
(f) Ripple factor	1% ~ 2%		
(g) Efficiency	≥90%		
(h) Stabilization mode	Stabilization mode		
(j) Adjustment range	Voltage/Current from 0-100% continuously adjustable within rated range		
(k) Cooling system	Air Cooling		
(l) Control method	PLC		
(m) LCD display contents	Voltage meter/Current meter/Working/Over temp/Error etc		
(n) Protection method	Input over voltage/under voltage, Over current, Output short/over heating self protection		
(p) Operating temp	To be mentioned		
(q) Ambient temp	To be mentioned		
(r) Ambient humidity	50-90%		
(s) Timer capacity	99 hrs, 59 min, 59 sec with working memory		
(t) Polarity change system	Automatic Forward/Reverse by Timer		

c.	(5) Exhaust blower fan with motor	Qty 05	
		Specification:	
		(a) Size	900mm x 900mm x 400mm
		(b) Flow rate, Q	28,000~30,000 m ³ /hr
		(c) Noise	10db <Noise <65db
		(d) Speed	800-900 RPM
		(e) Blade	6 pcs
		(f) Blade size	800 mm diameter
		(g) Power supply	3 phase, 380 ~ 420 V 0.75 ~ 1.1 KW
	(6) Over head crane 01 ton	Qty 03	
		Specification	
		(a) Capacity	1000 Kg
		(b) Lifting Height	Minimum 07Meter
		(c) Lifting speed	Minimum 4m/min
		(d) Traveling speed	Minimum 20m/min
	(e) Rope	Steel wire rope, Dia: 8 mm	
	(f) Power supply	3 Phase, 380V AC, 50Hz	
(7) Copper flat bar 100 mm x 10 mm	as required		
(8) Brass round bar ø 35 mm	as required		
(9)Ms seam less pipe for steam line	as required		
(10)Ms pipe for water line	as required		
(11) Lead pipe ø 25.4 mm	as required		
(12) Valves, Nipple, Socket, Tee, Elbo, Reducer etc. for Water, Steam, Air line. All are of SS	as required		
(13) Operating voltage & Current	Max and Min Operating voltage &Current to be mentioned		
(14) Power supply	380~420 V, 3 Ph, 50 Hz		
(15) Other requirements	(a)Time and temperature auto calculation with compensation time (b) Alarm system both for completion of task or any kinds of faults/difficulties (c) Automatic loading/unloading system (d) Composition of the solutions with necessary correction must be displayed on the screen (e) Rate of plating and final thickness of the plated layer must be displayed (f)Induced and force draft system Fume exhaustion system to be incorporated with the system (g) ETP system incorporated with the system and internal arrangement must be done in such a way so that it matches with the future ETP plant (h) Preview or simulation system must be shown on the monitor (j) Modern lighting system (k) Operating voltage, current and other relevant information must be displayed on the monitor		
	Conditions:		
	(1) PSI will be carried out under BOF arrangement by two (02) persons for three (03) days.		

	(2) Foreign Training:	
	(a) Machine operation & maintenance training to be conducted for three (03) BOF persons at machine manufacture site for 10 (Ten) working days. All training cost (air ticket, accommodation, internal travel, food etc.) to be borne by the supplier.	
	(b) Pocket allowance will be borne by supplier and amount must be mentioned in financial offer.	
	(3) List of spares, accessories and consumables (including price) recommended for 5 year period (Mechanical/ Electrical) required for smooth operation of the plant after the expiry of warranty period shall be provided.	
	(4) Performance test with training shall be carried out in BOF site	
	(5) It is the responsibility of supplier to fully integrate, erect and commission the plant at our identified site/ room.	
	(6) Performance and accuracies are to be demonstrated as per ISO Standards on supplied samples by us and on Calibration Standards supplied by the supplier.	
	(7) Extensive training (minimum 10 working days) shall be provided to BOF persons by the Supplier's Technical team at BOF site after installation and commissioning of the plant. The training should cover complete operation, application, basic & preventive maintenance and trouble shooting.	
	(8) The following documents (hard copy 2 sets & soft copy in CD/ Flash Drive/ HDD) to be provided;	
	(9) All the data and results of testing and calibration of the Computed Tomography at supplier's site shall be properly documented and supplied to BOF. Calibration Certificates (traceable to National / International Standard) of all the artifacts/ reference standards used for the same shall be provided.	
	(10) Operations, Calibration & Application software Manual – This document should explain all the measurement options, calibration, application of the system with sketches and detailed explanation.	
	(11) System administration & Maintenance manual – This document should explain the detailed system configuration and administration including controller, probe head with the help of sketches. System manual should explain known possible errors and solution for the same. User manual and service manual (for both Mechanical and Electronic Hardware/ Circuits) in English language should also be provided.	
	(12) Supplier should guarantee the availability of spares, software/ firmware updates and additional add-on modules for at-least 5 years from date of expiry of warranty.	
	(13) Customer support facility shall be made available for at least 05 (five) years after expiry of the guarantee period.	
d.	(14) . Service facilities and personnel availability.	
	(15) Service personnel to attend any fault within 3 days after receipt of the information, whenever called for.	
	(16) The plant shall have warranty for a minimum period of 12 months or more after commissioning for defect free operation and specified accuracies at our site.	
	(17) Any defect observed during the warranty period shall be replaced / repaired free of cost with minimum down time. All the software updates during the warranty period shall be supplied, installed and trained to our personnel on real time basis at free of cost	
	(1) Country of Origin	Group A
(2) Country of Shipment	Group A	
(3) Port of Shipment	Group A	

REQUEST FOR EXPRESSION OF INTEREST (EOI) OF ESTABLISHMENT OF TNT REFURBISHMENT PLANT

SL	Name	Description	Remarks
1.	Agency / Procurement Entity Name	Bangladesh Ordnance Factories (BOF)	
2.	Budget and source of funds	BOF Government Budget (MOD)	
3.	Project Name	Establishment of TNT Refurbishment Plant	
4.	EOI Closing date and time	05 September 2019	
5.	Description and address of official inviting EOI	Bangladesh Ordnance Factories (BOF). Gazipur Cantt. Gazipur 1703	
6.	Contact details of Official Inviting EOI	Deputy Director Planning Wing BOF, Gazipur Cantonment. Gazipur 1703 Telephone.: 9204613 Ext 4052 E-mail: ddplgbof@yahoo.com Mobile: 01769044052	
7.	The client reserves the right to reject all EOIs	Yes	
8.	Brief description of Projects		
a.	Quantity	01 (One)	
b.	Capacity	Minimum 50 Ton/Year	
c.	Project Status	TURN-KEY Basis	
d.	Purpose	Supply & installation of TNT Refurbishment Plant for disposal of following ammunition: (1) Artillery ammunition (from 60-155 mm), (2) Air craft bombs (MK80 SERIES upto 500 Kg), (3) Navy mines (up to t.n.t 250 kg), (4) Depth bombs (up to t.n.t. 150 kg), (5) Rocket warhead and rocket motor.	
e.	Number of Lines	As required for complete production (to be mentioned)	
f.	Ammunition Disassembling Unit	(1) Rocket disassembling device (2) Marine mines, submarine and aviation bombs disassembling device (3) Unscrewing device for i. Stabilizer & adapting bushing ii. Primer iii. Base fuse (4) Hollow charge body heating bath (5) Control system (6) Special and standard wrenches	To be mentioned
g.	Unit for TNT, TNT/RDX, PETN, Tritonal, Torpex melting out from shells of medium calibre cartridges, marine mines, submarine and aviation bombs and TNT scaling	(1) Container for melting out medium caliber (2) shell, marine mines, submarine and aviation bombs. (3) Plant for steaming of cases from medium caliber, naval mines, submarine and aviation bombs remaining explosives (4) Charging and discharging tank with lining for melted explosives (5) Conveyer belt (6) Control system	To be mentioned

h.	Ammunition shells washing unit with high pressure water, water purification unit and inner varnishing line	(1) Washing unit for medium calibre cases and other bombs	To be mentioned
		(2) Purification unit with filtering station	
		(3) Conveyor belt	
		(4) Varnishing and drying chamber	
j.	Unit of Body Thermal Processing and Driving Band Removal	(1) Standard equipment for body thermal processing and driving band removal	To be mentioned
		(2) Control system	
k.	Blasting Cartridge Production Unit	(1) TNT/RDX decomposition press	To be mentioned
		(2) Press for TNT/RDX blocks	
		(3) Armored chamber	
		(4) Protective coating application plant	
		(5) Monitoring and video supervision system	
l.	Detonation Chamber	(1) Armored furnace	To be mentioned
		(2) Armored furnace hatch	
m.	Delivery of Complete Processing Equipment with Required Tools, Safety Devices and Necessary Accessories	List of items to be mentioned by the bidder	
n.	Automatic Fire Fighting Unit	List of equipment for complete Fire Fighting System to be mentioned by the bidder in their offer.	
p.	Technical Documentation	<p>Following Documents to be provided by the supplier:</p> <p>(1) General explanation of the plant.</p> <p>(2) Ecological part: Assessment of influence on environment.</p> <p>(3) Operating documentation for production</p> <p> i. General layout, transport, safety distances</p> <p> ii. Architectural and constructing solutions</p> <p> iii. Technological part; planning of equipment</p> <p> iv. Energy part: Water supply, sewerage waters, power supply, lightning.</p> <p>(4). Automatic fire fighting</p> <p>(5) Automation of production</p> <p>(6) Security and fire alarm</p> <p>(7) Disassembling procedure of calibre 60~155 mm</p> <p>(8) Rocket disassembling procedure</p> <p>(9) Marine mines disassembling procedure</p> <p>(10) Aviation bombs disassembling procedure</p> <p>(11) Submarine bombs disassembling procedure</p> <p>(12) Hollow-charge projectiles disassembling procedure</p> <p>(13) Trotyl and mixed explosives melting out procedure from ammunition shells</p> <p>(14) Shells cleaning procedure with high pressure water</p> <p>(15) Ammunition shells thermal processing procedure to remove the remaining explosives</p> <p>(16) Band removal procedure</p> <p>(17) Blasting cartridge production procedure</p> <p>(18) Manuals on equipment operation and maintenance</p> <p>(19) The procedure of production quality inspection and its acceptance code shall be stated in appropriate rules of procedure sections.</p>	

q.	Conditions	<p>(1) Pre-Shipment Inspection (PSI) will be carried out under BOF arrangement by three (03) persons for five (5) working days.</p> <p>(2) Foreign Training: Manpower and duration of training on machine operation & maintenance to be suggested by the supplier.</p> <p>(3) List of spares, accessories and consumables (including price) recommended for 5 years (Mechanical/Electrical) required for smooth operation of the plant after the expiry of warranty period shall be provided.</p> <p>(4) Performance test with training shall be carried out in BOF site.</p> <p>(5) It is the responsibility of supplier to fully integrate, erect and commission the plant at our identified site/room.</p> <p>(6) Extensive training (minimum 10 working days) shall be provided to BOF personals by the Supplier's Technical team at BOF site after installation and commissioning of the plant. The training should cover complete operation, application, basic & preventive maintenance and trouble shooting.</p> <p>(7) All necessary documents (hard copy 2 sets & soft copy in CD/Flash Drive/HDD) to be provided in English.</p> <p>(8) Operations, Calibration & Application software Manual: This document should explain all the measurement options, calibration, application of the system with sketches and detailed explanation.</p> <p>(9) User manual and service manual (for both Mechanical and Electronic Hardware/Circuits) in English language should also be provided.</p> <p>(10) Supplier should guarantee the availability of spares, software/firmware updates and additional add-on modules for at-least 5 years from date of expiry of warranty.</p> <p>(11) Customer support facility shall be made available for at least 05 (five) years after expiry of the guarantee period.</p> <p>m. The plant shall have warranty for a minimum. period of 12 months after commissioning.</p> <p>(12) Any defect observed during the warranty period shall be replaced/repared free of cost with minimum down time. All the software updates during the warranty period shall be supplied, installed and trained to our personnel on real time basis at free of cost.</p> <p>(13) Leaflet/ Brochures of all equipment to be submitted with the offer.</p>
r.	a. Country of Origin	Group A Countries
	b. Country of Manufacture	Group A Countries
	c. Port of Shipment	Group A Countries

	(11)One year warranty for all Machines and equipment. If any Machine/equipment damages in the warranty period, that must be replaced by the supplier by their own cost.
	(12) List of fast moving Spares for 05 (five) years with price escalation must be supplied.
	(13) Installation, commission and trial run of Plants/Machines must be done by the supplier.
	(14) Any other items that is essential to manufacture 12 types Rifle components as per supplied drawing but not mentioned here must be supplied with offer.
	(15) Components produced in this line must have the sustainability of minimum 15000 rounds fire.
d.	Country of Origin Group A
e.	Country of Shipment Group A
f.	Country of Manufacturer Group A