

बैंक नोट मुद्रणालय, देवास (म.प्र.) 455 **001** BANK NOTE PRESS, DEWAS (M. P.) 455 001

(आईएसओ : 9001 एवं आईएसओ : 14001 प्रमाणित इकाई) (ISO 45001 : 2018 Certified Unit)

भारत प्रतिभूति मुद्रण तथा मुद्रा निर्माण निगम लिमिटेड की इकाई A Unit of Security Printing & Minting Corporation of India Limited

मिनिरत्न श्रेणी—।, सीपीएसई (भारत सरकार के पूर्ण स्वामित्वाधीन)

Miniratna Category - I CPSE (Wholly owned by Government of India)

CIN: U22213DL2006G0I144763

e-mail: bnpdewas@spmcil.com

website: www.bnpdewas.spmcil.com



Ph.: 07272-255222 Fax: 07272-255111

NATIONAL INVITATION FOR EXPRESSION OF INTEREST (EOI)

1.	Name of the		Bank Note Press, Dewas, Madhya Pradesh 455001 A Miniratna Category-I CPSE and Wholly owned by Government of India		
2.	organization Type of the organization	*			
3.	EOI Reference No.	:	BNP/P/ACP/ Heat Pump/2022/EOI Dated 01/06 /2022		
4.	EOI Title	:	Expression of Interest (EOI) for SITC of Water Cooled Screw Heat Pump		
5.	Category	:	Security		
6.	Sub-category	:	Capital / CAMC		
7.	Date of Annoucement	:	01/06/2022		
8.	Last date for submission	:	08/07/2022 before 14.30 hrs.		
9.	Technical Specifications and Scope of Work	:	Placed at Annexure I		
10.		:	Placed at Annexure II		
11.	Procurement Process	:	Placed at Annexure III		
12.	Specimen Response letter to EOI	:	Placed at Annexure IV		



Expression of Interest (EOI) for SITC of Water Cooled Screw Heat Pump AT BANK NOTE PRESS DEWAS. (M.P.), INDIA.

BNP/P/ACP/SITC of Heat Pump/2022/EOI

Bank Note Press, Dewas is an industrial unit of Security Printing & Minting Corporation of India limited (SPMCIL), wholly owned by Government of India, Ministry of Finance, Department of Economic Affairs. BNP was established in 1974 to print world class high quality bank notes of different denominations. Bank Note Press, Dewas has its own security printing ink manufacturing unit also.

Interested vendors fulfilling the eligiblity criteria as given in Annexure II are requested to submit Expression of Interest as per format given in Annexure IV to this expressison of interest. The Expression of Interest must be submitted with the brief profile of the firm, their past performance in silimar operation, financial background etc. in support of the eligiblity criteria. The Expression of Interest must be sent to the following address:

The Additional Generl Manager (Materials)
For and on the behalf of The Chief General Manager
Bank Note Press, Dewas (M.P.) 455001 India
Phone No. 07272-268253/268468
Email: bnppurchase@spmcil.com

Last date and Time for receipt of Expression of Interest

: On 08/07/2022

At 14:30 Hrs. (IST)

Dated: 01/06/2022

Date and Time of opening of Expression of Interest :

On 08/07/2022 At 15:00 Hrs. (IST)

Place of opening of Expression of Interest

Administration Block,

Bank Note Press,

Dewas (M.P.) 455001 India

Delay due to postal/courier etc, will not be entertained. Tender received after the due date and time will be rejected.

Regd. Office: SPMCIL, 16th Floor, Jawahar Vyapar Bhawan, Janpath, New Delhi - 110 001.

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Details of Annexures:

- 1. Technical Specifications and Scope of Work Annexure I
- 2. Eligibility/Pre-qualification Criteria Annexure II
- 3. Procurement Process Annexure III
- 4. Specimen Response letter to EOI Annexure IV

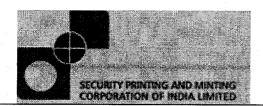
For and behalf of Security Printing and Minting Corporation of India Limited

OI. 06. TO MARTINE THE PROPERTY STORY (ALLE)

Diganta Kumar Deka Additional General Manager (Materials), Bank Note Press, Dewas (M.P.) 455001 India Phone No. 07272-268253/268468

Note: The Company reserves the right to accept/reject any application at its sole discretion and / or cancel the entire exercise. Mere fulfilling the minimum eligibility criteria will not confer any right on the applicant to be called for discussion/selection.

All Addendum/Corrigendum to this EOI shall be uploaded only on website i.e. www.spmcil.com.



BNP/P/ACP/ Heat Pump/2022/EOI

Dated 01/06/2022

Background of the company

Security Printing and Minting Corporation of India Limited (SPMCIL) is a Mini-Ratna Category-I CPSE and a wholly owned schedule 'A' Company of Government of India and is under the administrative control of Department of Economic Affairs, Ministry of Finance, Government of India. SPMCIL is engaged in the manufacture of currency/security paper, minting of coins, printing of banknotes, non-judicial stamp papers, postage stamps, travel documents, etc. having nine units including four mints (India Government Mint-Kolkata; India Government Mint-Hyderabad; India Government Mint-Mumbai and India Government Mint-Noida), two security presses (India Security Press, Nashik and Security Printing Press-Hyderabad), two currency presses (Currency Note Press, Nashik and Bank Note Press-Dewas) and one paper mill (Security Paper Mill-Hoshangabad) across the country.





Annexure -I

(I). Tender No. BNP/P/ACP/ Heat Pump/2022/EOI Dated: 01/06/2022

A. Technical Specification & Scope of Work:

(Expression of Interest (EOI) for SITC of Water Cooled Screw Heat Pump)

Supply, Installation, Testing and Commissioning of energy efficient CFC free water to water cooled Screw Heat Pump unit on turnkey basis – 01 No

Duty Condition:-

The energy efficient CFC free, water cooled, semi hermetic screw type heat pump shall have heating capacity 825±3% KW & cooling capacity 160±3% TR after considering the following parameters:-

General

Refrigerant: R134A
No's of refrigerant circuit TWO

Compressor Type Compact Semi Hermitic twin screw

No's of compressors TWO

Water-Water Heat Pump Performance

Heating Capacity $825 \pm 3\%$ KWCooling /Refrigeration Capacity, $160 \pm 3\%$ TRPower consumption259.5 KW

Evaporator Entering/leaving Temperature 12/7°C

Condenser Entering/leaving Temperature 55/65°C Efficiency, Heating 3.17 copHEAT

Efficiency, Cooling, Heating 5.34 copSHC

Condenser Shell & tube
Fluid Water

Condenser Quantity
Condenser fouling Factor
Condenser Flow
71.98 m3/hr

Condenser pressure Drop 40.7 kPa

Evaporator Direct Expansion shell & Tube Fluid Water

No of Evaporators

ONE nbr

Evaporator fouling Factor

Evaporator Flow

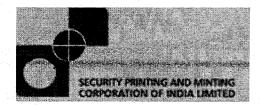
Evaporator pressure Drop

0.01800 m2·K/Kw
96.69 m3/hr
36.02 kPa

Electrical
No of phases
Voltage

3
400+/-10% Volts

Frequency 50 Hz



Rated Running Load Current Compressor Starting current Starting Method Incoming Selection 441 Ampere 504 Ampere VFD with star delta starter as back up 520 Ampere

General: - The supplier in accordance with the Bill of Quantities shall supply, install, test and commission Packaged water cooled type Screw Heat pumps.

- a. These units shall be completely factory assembled including the Rotary Screw Semi- Hermetic compressor (s), shell & tube DX type or flooded evaporator, shell & tube type water cooled condenser, microprocessor control panel, suitable capacity of VFD & star delta starter for backup etc.
- b. The packaged heat pump shall be factory assembled & charged with a full operating refrigerant and oil charge. It shall be tested on test bed as per AHRI standards.
- c. The heat pump shall have multiple compressors and two independent refrigerant circuits. Each circuit should have independent evaporator, compressor, condenser, electronic expansion valve, starter etc.
- d. The machine shall have dual set points.
- e. The heat pump shall be capable of continuous stable operation even at part load condition.
- f. Heat transfer surfaces shall be adequate for the loads indicated.
- g. The heat pumps should have step less control for capacity modulation.
- h. The heat pumps shall be equipped with electronic expansion valve and phase controller.
- i. The heat pump should be energy efficient, water cooled & CFC free.

Structure: The compressors and the control panel should be mounted on top of the condenser and evaporator assembly.

Compressor:

- a. The screw compressors should have highest volumetric efficiency and step less capacity control from 25% to 100% so that it will be suitable for varying load applications and has better efficiency under part load condition.
- b. The contractor shall also mention the power consumption at part load. The capacity control help in limiting the starting current so that system can be started in unloaded condition (25%) and the loading is done step less manner.
- c. The screw compressor should semi-hermetic in construction, which makes it serviceable.
- d. The only moving parts should be male and female screws and slide valve.
- e. The vibrations of the unit should be as minimum as possible.
- f. The heat pump shall be provided with single-stage, direct connected, positive displacement semihermetic rotary screw compressor of the oil injected type driven by suitable motor.
- g. The screw chiller shall be of multi screw type, with the provision of each compressor operating in isolation, in case the other is non-operative.
- h. All the moving parts in the compressor shall be dynamically balanced to minimize the operating noise, vibration and ensure longer life of the compressor.
- i. The pure rotary motion of the compressor shall ensure uniform flow of gas, even torque and positive displacement. The intake and discharge cycle shall overlap.

Compressor Motor:



a. The driving motor shall be TERC squirrel cage type,

b. It should be protected against damage by means of built in protection devices.

- c. The compressors and motors shall be fully protected against abnormal operating conditions by high and low pressure switches, thermal relays, overload relays, phase failure protection and other safety controls.
- d. The motor windings shall have solid state protection to prevent the motor from operating at unsafe operating temperatures.

Water Cooled condenser:

a. The shell and tube condenser shall have externally & internally enhanced and highly efficient finned copper tubes with optimum refrigerant and water velocity.

b. The shell shall be made of high grade steel.

- c. The expansion of the tube shall be with torque control process to avoid any possibility of leakage.
- d. The condenser end cover on both sides shall be marine water box type with hinges for easy de-scaling.
- e. The water connection shall be made at sides with suitable flanges.

f. The condenser shall be designed for 100% capacity.

g. The system shall be equipped with pressure relieving valves located on the top surface by means of a three way shut off valve for the purpose of relieving excessive refrigerant pressure to the atmosphere

h. a three way shut off valve separating the two valves. One valve remains at the system at all times & the second valves act as a stand by. If one relief valve of the two valve set fails the shut off valve may be used to isolate the fault relief valve, while the other valve provides pressure protection.

Evaporator:

a. The Evaporator should be direct expansion or flooded type or shell and tube type.

b. It should have externally & internally enhanced and highly efficient finned copper tubes.

c. The shell shall be made of high grade carbon steel.

- d. The expansion of the tube should be with torque control process to avoid any possibility of leakage.
- e. The evaporator end cover on both sides shall be marine box type with hinges in flooded type evaporator or in case of DX type evaporator shall be fitted by means of nuts & bolts on both sides.

f. The water connection shall be made at sides with suitable flanges.

g. The evaporator shall be designed for 100% capacity with optimum refrigerant and water velocity

h. It shall be painted with anti-corrosive paints.

i. The insulation shall be made in two layers. The joint shall be staggered to avoid any moisture leakage. The total insulation thickness shall be 38mm. The insulation material shall be used elastomeric nitrile rubber / closed cell nitrile foam in two layers of density $30 - 70 \text{kg/m}^2$.

Oil Separator:

- a. Each compressor shall have inbuilt or external oil separation system to separate the oil from the refrigerant.
- b. The oil temperature should be controlled during operation throughout the system.

c. This shall be specially designed for low velocity of refrigerant

- d. It shall have demister pads for effective oil separation.
- e. It shall have an integral oil reservoir at the bottom.
- f. Oil level switch shall be incorporated for the safe operation of compressor in case of fall in oil level below acceptable limit.
- g. The oil flow back to the compressor shall be due to differential pressure.

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- h. A solenoid valve shall be provided on oil return line which shall energize along with the compressor start.
- i. The oil flow switch shall be provided in the line as an additional safety, trips the compressor in case of stoppage of oil return

Oil Recovery System:

- a. In the flooded cooler, the liquid refrigerant boils in the shell and the compressor should suck refrigerant vapors at low velocity. While the refrigerant boils to become vapors, the minute quantity of oil which was mixed with the refrigerant can be left behind in the evaporator which also needs to be recovered back to the compressor. For this purpose oil recovery system shall be designed & manufactured by the contractor as per AHRI standards.
- b. In case of DX type evaporator the oil recovery system should be inbuilt.
- c. The material shall be made up of high grade carbon steel

Refrigerant level controller:

a. In case of flooded evaporator, the level transducer probe shall be installed to detect the refrigerant level in the flooded evaporator to maintain the liquid refrigerant level in the cooler to the desired level. b. In case of DX type evaporator it is not applicable.

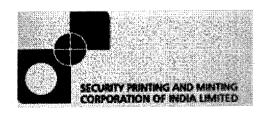
Expansion Valve:

- a. The Screw heat pump shall be fitted with an electronic expansion valve to achieve accurate control of refrigerant mass flow
- b. It shall have features such as short opening & closing time; positive shut -off function, linear flow capacity for continuous modulation.

Starter:

- a. Along with suitable capacity of VFD for each compressor, Start delta starter shall be provided as backup with cubical control panel.
- c. Controller: The control shall be microprocessor based designed. The controller shall have set points and control options that can be selected prior to commissioning a system or when the unit is live and functioning. The main controller for the chiller consist of CPU, programmed memory 2+2MB, 16 bit, Data memory (RAM) 512KB, 16 bit, Permanent memory 13KB. Temperature setting control should be in the range of \pm 0.50 C.
- d. The flowing data shall be available on display of the controller for each compressor
- i. Dual set points for evaporator inlet /outlet or condenser inlet / outlet temperature.
- ii. Entering and leaving chilled water temperature.
- iii. Entering and leaving condenser water temperature.
- iv. Suction pressure
- v. Suction temperature
- vi. Discharge pressure
- vii. Discharge temperature
- viii. Compressor status.
- e. Safety: Following safeties shall be directly sensed by the controller and acted upon:-
- i. High condenser/discharge pressure.
- ii. Low suction pressure.
- iii. High Oil temperature
- iv. Anti-freeze.





- v. Compressor motor over load on current/power loss.
- vi. Low Oil level.
- vii. Phase unbalance.
- viii. Chilled water flow loss.
- ix. High motor temperature
- f. The other safety which are sensed by other devices but action is to be taken by the controller like over voltage / under voltage / single phasing/ reverse phasing / voltage unbalanced / motor winding over heat / low condenser water flow/low chilled water flow etc.
- g. The display should be on touch screen panel.
- h. The controller shall be equipped with battery backup for memory and clock to take care of any power failures.
- i. The controller shall be programmed for automatic startup on resumption of power after power failure.
- j. The controller shall have an internal 7-day, and holiday clock with programmable time scheduling.

LT Cable:

- a. The LT cable shall be 3 ½ core 240 sq.mm XLPE insulated, strip armored, multi strand cable with stranded aluminum conductor suitable for working voltage up to and including 1100 Volt
- b. The cable shall be confirming to IS: 7098 part-I with amendment up to date and ISI marked.

SITC of 02 Nos earth pit for Heat pump:

Earth Pit (Safe Earthing Copper Plated Electrode) Pipe - In – Pipe/ solid rod Earthing technology . with Copper Earthing strip Size 5*20mm

PERFORMANCE TEST:

- 1. Tenderer shall show the performance of compressor including its capacity of running on test bed at manufacturer work stimulating the load and operating parameters as per AHRI standard. The tenderer shall also install by pass rotameter in the chilled water system as well as in hot water circuit to measure the quantity of water flow, temperature difference to measure the energy consumed during the operation and other parameters.
- 2. The compressor offered by tenderer shall be energy efficient, CFC free and shall not consume energy more than 265 KW /hr. The lesser power consumption is preferred. The same shall be brought out by the firm in their technical bid for all load percentage.

A) WORK PORTION:

- 1. Installation of water cooled screw heat pump in AC Plant.
- 2. The inlet chilled water connection should be made in our existing 24 inch dia. water header and out let in chilled water cold well. Similarly inlet condenser water connection should from the circulating out let condenser water connection shall also be done in hot water tank.
- 3. Isolating valves, flow control valves and suitable flanges, bolts & nuts shall be installed in condenser and evaporator inlet & outlet water lines.
- 4. Temperature and pressure gauges shall be installed in condenser and evaporator inlet and outlet water lines
- 5. Positioning on M S foundation installation, testing & commissioning of Screw heat pump.
- 6. Supply and lying of electrical cabling in existing trench from BNP electric panel to the Screw heat pump starter panel. 2 run from main panel to heat pump control panel: 3.5 core x 240 sq.mm x 2 XLPE Aluminum armored cable with terminal connection.

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- 7. Supply, installation, testing & commissioning of condenser water piping connection to the main headers.
- 8. Supply, installation, testing & commissioning of chilled water piping connection to the main headers.
- 9. Dismantling of old 02 Nos water circulating pump & SITC of 02 Nos Centrifugal back pull out hot water circulating pump sets compete with coupling, TEFC, IE3 motor, IP65 with base plate and necessary accessories like control panel, Electrical cable from pump motor to panel etc.

10 SITC of Earth Pit (Safe Earthing Copper Plated Electrode) - 2Nos

- 11. Unloading of equipment's at site.
- 12. Civil Work: Breaking & Re-plasting of cemented floor for underground piping of Chilled & not water (Approx. 150 Sqft) (Note: All mention & incident civil work is under tenderer scope)

Important Note: 1. Participating firm may visit BNP, Dewas with prior permission to take exact measurement and understand the scope of work mention in tender.

2. SITC of water cooled screw heat pump is on turnkey. All incidental & civil work are in tenderer scope and they have to arrange all necessary equipment & auxiliary accessary which are required to complete the task.

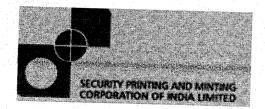
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Sr. No.	Checklist	Checklist (YES/NO)
1	Have you understood the complete requirement?	
2	Have you provided the Bill of Material (BOM) required for overall completion of upgradation/replacement?	
3	Have you provided generic specifications for the BOM items?	1
4	Have you quoted rates of the BOM items along with applicable GST and Freight?	
5	Have you quoted buyback unit rates for the item which need to be replaced?	ONE OF MOUS
6	Have you quoted CAMC (without manpower) Rates on yearly basis for 5 years?	



(II). General Requirements:

- 1. The firms will ensure that their interests, duly sealed and signed, complete in all respects as per instructions contained in the Invitation to E.O.I. Documents, are dropped in the tender box located at the address given above on or before the closing date and time indicated above, failing which the interests will be treated as late and rejected.
- 2. The firm should furnish the firm's name, full postal address (Office), Phone Number and Fax Number; Name of the authorized contact person and e-mail address.
- 3. The firm should not have been blacklisted /debarred for dealing by Government of India, any State Govt. or any PSU, in any manner and an undertaking should be submitted along with the Bid, to this effect.
- 4. Participants are required to stamp and provide their authorized signature on every page of the E.O.I. document and all the supporting documents submitted as a token of acceptance to the mentioned terms and conditions.
- 5. Interested firms have to submit attested copies of various license certificates like Trade License, GSTIN Registration Certificate, Service Tax Registration Certificate, PAN Registration Certificate and other registration certificates as required as per the prevalent Prices & Registrations of the Govt. of Madhya Pradesh/ Govt. of India with their application.
- 6. Participating Firms has to submit Budgetary Quote with break-up along with detailed Technical Specification/Scope of Work.
- 7. The vendor should have the basic facilities and expertise in similar technology/field at global/national level.



Annexure -II

Eligibility/Pre-qualification Criteria

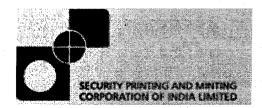
1. Status: The applicant should be either proprietary firm/ Limited Liability Partnership (LLP)/company/Partnership/ (legal entity) registered under relevant regulation of the respective Country. The applicant should be in business of manufacturing/supplying of such type of Items/ Services.

2. Experience:

- a. The firm should have past experience in supply & Installation of same / identical Items to any Industries in the last 05 financial year ending on 31.03.2021 Relevant documentary proofs are to be submitted along the offer.
- b. The interested bidders should also submit along with Expression of Interest a list of parties to whom they have supplied similar type of Items/Services with details and customer satisfaction report form their clients.

3. The bidder should also confirm specifically that:

- a. Applicant is competent and legally authorized to submit and/or to enable into legally binding contract.
- b. The firm should confirm their annual supply/manufacturing capacity for such Items/ Services.
- c. Applicant will absolve the purchaser against any infringement of patent rights and other contract provisions.
- 4. The bidder firm should have not been blacklisted/ debarred by BNPMIPL/SPMCIL/Government of India for participation in tender of last on the last date of submission of EOI. An undertaking for the same should be furnished.
- 5. The copy of audited balance sheet and Profit and loss account for last three financial years ending 31.03.2021 are to be submitted along with the proposal.



- 6. All documents are to be submitted in English/Hindi language only. If the documents are in other language English translation copy shall be furnished along with the documents.
- 7. The Department of Industrial Policy and Promotion (DIPP) Public Procurement order no. P-45021/2/2017-BE-II dated 15.06.2017 shall be applicable.

Note:-

- 1. All experience, past performance and capacity/capability related data should be certified by the authorized signatory of the bidder firm.
- 2. All financial standing data should be certified by certified accountant's along with UDIN No. e.g., Chartered Accounts (CA) in India and Certified Public Accountant/Chartered Accountants of other countries.

Bidder to furnish stipulated documents in support of fulfillment of essential qualifying criteria. Non-submission of documents may lead to rejection of offer.



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Annexure-III

Procurement Process

Following are the details of the process of BNP, Dewas.

- 1. At first the EOI for procurement of above items/services is published.
- 2. The firms participating in the EOI are called for details presentation and discussion regarding their offer of service/goods.
- 3. Later on open Tender will be floated comprising of 2/3 parts namely PQB, Techno-Commercial Bid & Financial Bid which are to be submitted in two/three separate double sealed envelopes on or before the due date of submission of tender. The envelopes containing Bids shall be super scribed as "Pre-Qualification Bid", "Techno-Commercial Bid", "Financial Bid" as the case may be.

Date:....





Annexure-IV

BNP/P/ACP/SITC of Heat Pump/2022/EOI

Dated: 01/06/2022

WE HAVE GONE THROUGH THE ABOVE REFERRED EOI AND UNDERSTOOD YOUR REQUIREMENTS WITH RESPECT TO EXPRESSION OF INTEREST FOR Expression of Interest (EOI) for SITC of Water Cooled Screw Heat Pump AT BANK NOTE PRESS DEWAS. (M.P.), INDIA.

We fulfill the eligibility criteria and undertake that;

- 1. We have noted, understood and agreed to all the terms and condition of the EOI. In token of our acceptance, we have enclosed the EOI documents duly signed by the authorized representative.
- 2. I / We and are Proprietary firm/ Limited Liability Partnership (LLP)/Company/Partnership and I /We have enclosed the registration certificate issued by the registration authorities as applicable in the country of origin as documentary evidence. (Please indicate as applicable)
- 3. I/ We have supplied/Provided similar Items/Services to ______nos. of manufacturers/printing presses etc. globally or within India from years_____ to _____. I / we have enclosed the work offer/customer satisfaction certificate/completion certificate issued by _____ as documentary evidence.
- 4. We have the total experience of ______ years in the related field as on 31.03.2021.
- 5. The average annual turnover for last three financial years i.e.2021-2020, 2019-2020, 2018-19, is INR______. I/We have enclosed the annual report/statement of accounts (preferably audited) and a statement of average annual turnover of last 3 years duly authenticated by an authorized official of the Company/firm.
- 6. We declare that have not been black listed/debarred by BNPMIPL/BRBNMPL/SPMCIL/Government of India for participation in tender.
- 7. We also enclose our brief profile and list of our major clients for your consideration.
- 8. We will be interested to present out proposal and demonstrate our past performance/details of the system being offered to you at a meeting at your convenience.



9. We are enclosing copy of English translation of the documents which are not in English/Hindi.

For		
1 01		

(Name and designation of officer)

Enclosures:

- 1. Duly sealed and signed each and every page of EOI
- 2. Registration certificates
- 3. Work order or completion certificate
- 4. PAN Card copy and copy of GST registration certificate.
- 5. Brief profile and list of major clients.
- 6. Budgetary Quote with break-up of Taxes & Other Charges, if any.
- 7. Generic Specifications of the proposed system.
- 8. Delivery Period.

