CRICKET ASSOCIATION OF YSR DISTRICT

No: 01/CAYD/2021-22

Date: 08/12/2021

Notice inviting **Expression of Interest** for Survey, Design, Supply, Installation, Testing and Commissioning of LED Sports Flood Lights at YS Raja Reddy – ACA Cricket Stadium, Kadapa, Y.S.R. District. From reputed Firms/ Agencies/ Companies/Contractors having valid licenses and experience in the field above mentioned work suitable for National level matches with CTV transmission. The **EOI** shall be subject to terms and conditions as mentioned in Annexure - A.

Interested bidders may submit their proposals as per below schedule.

Sl. No	Particulars	Date & Time
1	EOI Start Date	08/12/2021 at 09.00 hrs
2	EOI End Date	21/12/2021 Up to 17:00 hrs
3	Financial and Technical Bid Submission End Date –	21/12/2021Upto 17:00 hrs
	(Physical only in sealed covers)	
4	Technical Bid/Financial Bid Opening Date	21/12/2021 at 17.00 hrs
5	Period of Completion	180 Days

Note: CAYD reserves the right to accept or reject any/all EOIs without assigning any reasons, whatsoever

Secretary,

CAYD, YSR District

Annexure – A

- 1. Illumination Lux Levels should be designed Suitable for live Colour TV Transmission.
- 2. Make of components.
- a. High Mast Towers Bajaj/Valmont
- b. LED Flood Flights Philips/Bajaj/ Havells
 c. AI & CU Cables & Wires Polycab /KEI/AVOCAB
 d. Fabricated Panel Boards L&T/Schneider MCCBs/ CPRI Approved vendor
- e. MCB DBs & MCBs Legrand/Hager/Siemens/ L&T/Schneider

*Note: - LED flood lights should be Make in India Product.

Terms and Conditions:

- The applicant should be registered (any one) with CPWD, Andhra Pradesh PWD, MES, Railways in appropriate category for electrical/(B&C) works. The registration certificate should be valid till the last date of receipt of tender. Applicant should submit notarized copies of the valid registration certificate with Bids. The bidder should be of the following: OEM of High-power LED flood light fixture AND Stadium masts meeting specific experience criteria.
- 2) Time period of completion of work shall be 180 days (One hundred eighty days) from the date of placing the Work Order of CAYD, Kadapa. Bidder may e-mail queries on <u>kdcaapex@gmail.com</u> for participating or submit to CAYD office at YSRR Cricket Stadium, Kadapa in hard copy on all working days before a day of submission date of Bids.
- 3) All agencies need to submit their Bids in hard copy in sealed envelope covers to this office by suitable means on and before 5:00 PM on 21/12/2021 Bids received after the date and time specified above shall not be accepted.
- 4) Bids will be opened on the same day (21/12/2021) at 5:30Pm in the presence of agency or their authorized representative, if any. The offer of the agency should be commercially clear including acceptance of all terms and conditions of the Bids by the agency. CAYD, Kadapa reserve the right to accept or reject the Bids without assigning any reasons.
- 5) Quoted rates should be inclusive of cost of all materials, labour cost, GST, all taxes, octroi, duties, cost of sample and fees towards testing of materials in labs, royalties etc. Nothing extra shall be paid separately.
- 6) All approved makes shall be as per list provided above with this and as per CPWD, NBC and manufactures specifications. Agencies should put up technical data and obtain prior approval on various materials from CAYD, Kadapa before taking up the work.
- 7) The Contractor shall ensure that minimum wages should be paid to labours and employees in accordance with labour laws.
- 8) Agency to submit actual measurements, along with Auto CAD / Technical drawings of the installations and abstract sheet to CAYD, Kadapa within 30 days from the completion of work.
- 9) Agency to train the YSRR Cricket Stadium staff in technical and operational works of the flood lights.
- 10) Similar Work means Design, Engineer, Supply, Delivery, Install, testing & Commissioning with Defect Liability obligation for Sports Arena Lighting for athletic tracks/Football/ Cricket ground using specialized software to determine the LUX level at each noddle point in 5m X 5m grid over the entire surface field of play and achieving required LUX level from 500 LUX up 2200 LUX as per Requirement of the sports and High level of competition where National level players are expected to participate. The Experience in installation of arena lighting using LED light is also the part of similar work. Completion certificates from client should be attached.
- 11) Drop and register your Bid in hard copy in a sealed envelope cover in the EOI Box at this office of CAYD, YS Raja Reddy – ACA Cricket Stadium (ACA South Zone Academy), Near Silparamam or New RIMS Hospital, Putlampalli (Village), Kadapa Town, YSR District (A.P.) – 516004, Mobile No.9440914442 / 9440778440.

BIDDER ELIGIBILITY CRITERIA

FINANCIAL:

- a) Average annual financial turn over should be at least 80% of the estimated cost during the immediate last 3 consecutive financial years.
- b) Should not have incurred any loss (Profit after tax should be positive) in more than 2 years during last five years.
- c) Net worth of the bidder for should be positive during the immediate last 3 consecutive financial years. CA certificate towards the same has to be submitted along with Bid.

TECHNICAL:

- a) The prospective bidder shall be Original Equipment Manufacturer (OEM) of High mast and LED Luminaire. or a resourceful contractor having Authorization from OEM of high mast as per format given in Annexure 3. If OEM bids through their authorized associate/ dealer/executer, the Work Experience of OEM shall be required.
- b) The prospective bidder shall get authorization from only one OEM. Important Note: If the bidder fails to submit MAF for High Mast as Per Annexure -3 Duly Certified by OEM with Technical Bid, Then the bidder will be "Disqualified".
- c) The bidder who have been delisted or debarred by any authority of State / Central Government department or State / Central Govt. Undertaking / Statutory Bodies shall not be eligible in any way.
- d) The prospective bidders shall have minimum 7 years of experience in executing High Mast sports lighting projects. Copies of Purchase order & completion certificate in support of the same shall be submitted along with bid as qualification criteria.
- e) Preference to Make in India product will be given.
- f) The prospective bidders shall be enlisted in CPWD /PWD as a contractor.
- g) The prospective bidders must have authorized office and service centre in that particular state.
- h) The Bidder / OEM of High Mast should have in-house civil, structural, Lighting and product design facilities and should provide details of the structural design engineer along with Bid.
- i) The OEM of High Mast shall have minimum 7 years of experience in manufacturing of high mast and purchase order towards the same shall be provided as qualification criteria.
- j) The OEM should have factory registered in his own name and attach the copy of factory registration / license along with the bid.

- k) The high mast is to be manufactured from ISO 9001, ISO 14001 and ISO 45001 certified factory taking care of all aspects of design, quality, environment and safety. The valid ISO certificates shall be submitted along with bid.
- I) The high mast manufacturers should have in-house facility to do the mechanical and chemical testing of the steel and the zinc received at the factory. The manufactures shall have spectrometer for chemical testing and universal testing machine for mechanical testing to ascertain product quality.
- m) The high mast manufacturer should have CNC controlled profile cutting, CNC Controlled bending to have uniform bending, CNC controlled welding for the uniform welding and CNC controlled Galvanizing to control the bath temperature. The manufacturer of the high mast shaft must provide the details of the machinery along with the proposal in the enclosed Annexure 2.
- n) The high mast manufacturers should adhere to the inspection and test quality plan attached along with tenders and should give the confirmations to adherence to the same and to provide documentary evidence at the time of inspection for the verification by TPI /Client.
- o) The OEM has to conduct wind tunnel test on a specimen to establish the force coefficients of the 20sided polygon and the value received from the wind tunnel test is to be taken in design.
- p) The winches are to be type tested through reputed institutions like IIT as consultants. Third Party Type Test report should be submitted along with the bid.
- q) Experience of having successfully completed works during last seven years ending previous day of last date of submission of bid
 - a. Three similar works each of value not less than 40% of estimated cost.
 - b. OR
 - c. Two similar works each of value not less than 60 % of estimated cost.
 - d. OR
 - e. One similar work of value not less than 80 % of estimated cost.
- r) The details of the high mast supplied in the previous jobs along with the copies of purchase order and completion certificate are to be enclosed along with bid as per Annexure-1.

Definition of Similar work shall mean "Supply, Erection, Testing and Commissioning of (30Mtrs minimum) High Mast poles with luminaire for outdoor sports lighting".)".

As regards evaluation of experience certificate, for similar works executed & completed, issued by an officer not below the rank of executive Engineer or equivalent rank in private sector, the value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to last date of receipt of submission for bid.

At the time of uploading of tender the main contractor i.e. Bidder shall have to upload a Manufacturing authorization form (MAF) as per Annexure-3 on the letterhead of the manufacturing concern and should be signed by a competent person of the manufacturer.

Annexure: -1

The particulars of the successfully completed similar works during last 7 years ending last day of month previous to the one in which applications are invited:

Sr. No.	Order No. & date	Brief Description of similar works carried out	Contract Value	Month & Year of the works		Name & Contact Details of clients.	Client's satisfactory completion	
				Commenced OnCompleted On			No.	Date

As regards evaluation of experience certificate, for similar works executed & completed, issued by an officer not below the rank of executive Engineer or equivalent rank in private sector, the value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to last date of receipt of submission for bid.

(For & On behalf of Bidder/ Contractor)

Authorized Signatory Name: -

Designation: -

Office seal

Place:

Date:

Annexure: -2

List of the Machinery in the Plant

Sr. No	Name of the Machines	<u>(Yes/No)</u>
1	CNC Profile Cutting Machine	
2	CNC Bending Machine	
3	CNC Welding Machine	
4	CNC Controlled Galvanization Bath	
5	Spectrometer	
6	Impact testing Machine	
7	Universal Testing Machine	

(For & On behalf of Bidder/ Contractor)

Authorized Signatory Name: -

Designation: -

Office seal

Place: Date:

Annexure: -3

Manufacturer's Authorization Form (MAF) (To be submitted for High Mast)

No._____ dated _____

To (Tender Inviting Authority)

Dear Sir,

Tender Reference No.

We ______ who are established and reputable manufacturers of ______ having factories at _____and _____do hereby authorize M/s._____ (Name and address of Agent / Dealer) to participate in the above tender.

We hereby extend our technical assistance to the bidder during engineering and inspection of the product.

We have studied the requirements of the product and confirm that we will adhere to the specifications of the tender and quality plan and extend all support during the inspection and provide documentary evidence at the time of inspection for the verification by TPI /Client.

Yours faithfully

(Name)

for and on behalf of M/s.

(Name of manufacturers)

Note: This letter of authority should be on the letterhead of the manufacturing concern and should be signed by a competent person of the manufacturer.

TECHNICAL SPECIFICATIONS FOR SPORTS FLOOD LIGHTING OF CRICKET NATIONAL LEVELWITH CTV TRANSMISSION AND FUTURE PROVISION FOR INTERNATIONAL WITH HDTV TRANSMISSION TOURNAMENT.

PROPOSAL

Based on the lighting design parameters as defined below, bidders shall submit their proposal with the following considerations:

SCOPE OF WORK: Following work shall be included in the bidder's scope:

• Preparation of Illumination design as per guidelines defined below and validation of the same by measurement of illumination levels.

LIGHTING PARAMETERS:-

Following illuminance parameters shall be considered for the purpose of lighting design and which is also required output:

i) Provision for International Lighting: - High Mast Pole i/c foundation shall be designed as per Lux level defined in below Table –A.

Table A

Cricket Area	Vertical Illui camera at No	luminance Level wrt main Horizontal Illuminance Level North & South Stand						
	Average Illuminance	Vertical Uniformity		Average Illuminance	Horizontal Uniformity.			
	(Lux)	U1(Min/Max)	U2 (m /Avg)	in	(Lux)	U1(Min/Max)	U2 /Avg)	(min
Pitch	2500	0.70	0.80		3000	0.80	0.90	
Infield	2000	0.50	0.70		2500	0.70	0.80	
Outfield	1500	0.40	0.60		2000	0.50	0.70	

ii) Provision for present lighting as per below Table-B

<u>Table B</u>

Cricket Area	Vertical Illui camera at No	minance Leve orth & South Sta	l wrt main nd	Horizontal Illuminance Level			
	Average Illuminance	Vertical U	niformity	Average Illuminance	Horizontal Uniformity.		
	(Lux)	U1(Min/Max)	U2 (min /Avg)	(Lux)	U1(Min/Max)	U2 (min /Avg)	
Pitch	2000	0.60	0.80	<mark>2200</mark>	0.70	0.80	
Infield	1500	0.50	0.60	<mark>2000</mark>	0.60	0.70	
Outfield	1250	0.40	0.50	<mark>1500</mark>	<mark>0.50</mark>	0.60	

- Horizontal Illuminance is considered at ground level
- Color Temperature of Lamp :> 5600K.
- Color Rendering Index(Ra) of lamp:>80
- Project maintenance factor considered :-0.85
- Illumination calculation grid Pitch:- 2Mtr X2 Mtr
 Infield:-5Mtr X5Mtr

Outfield:-5mtr X5 Mtr

Switching Parameters:-

Sr.No	Event	Application Area	Average Vertical Illuminance (Fixed Camera)	Vertical Uniformity		Average Horizontal Illuminance	Horizontal Uniformity.	
			(Lux)	U1 (Min/Max)	U2 (min /Avg)	(Lux)	U1(Min/ Max)	U2 (min /Avg)
1	National Level televised -CTV	Pitch	2000	0.60	0.80	<mark>2200</mark>	0.70	0.80
		Infield	1500	0.50	0.60	<mark>2000</mark>	0.60	0.70
		Outfield	1250	0.40	0.50	<mark>1500</mark>	<mark>0.50</mark>	0.60
2	National Non televised	Pitch				1000	0.70	0.80
		Infield				750	0.60	0.70
		Outfield				750	0.40	0.50

Technical Specification of Mast :-

- Design, supply, installation, testing & commissioning of following equipment:
 - Polygonal high mast towers with fixed head frame along with man-rider unit for accessing the head frame platform. The man-rider unit shall be common for all 4 masts. Structural design of the high mast has been carried out as per ILE Technical Report No. 7 considering gust wind speed as per IS875.
 - Casting of civil foundation for the masts. The end user will provide soil-bearing capacity at site for the purpose of design of civil foundation. Based on the input from end user the foundation is to be designed.
 - LED Floodlights of 1500W complete with driver.
 - Outdoor type High Mast Lighting Distribution Boards (HMLDB) to be located closed to individual mast.
 - Outdoor type Main Lighting Distribution Boards (MLDB) to be located at the available place in the vicinity of ground.
 - Cabling from HMLDB to flood lights.
 - Cabling from MLDB to HMLDB.
 - Earthing for equipment and flood light mounting structures.

Following works are excluded from bidder's scope and shall be arranged by client:

- a) Power supply for testing, commissioning and operation of flood lighting system.
- b) Supply, laying and termination of incoming cables to MLDB from power supply point.

TECHNICAL SPECIFICATIONS OF THE EQUIPMENTS:

HIGH MASTS

High masts shall be polygonal, continuously tapering, hot dip galvanized with suitable fixed type head frame for mounting the flood light fixtures.

Polygonal high masts offered shall have following special features

- Masts shall be structurally designed in accordance with PLG 7– latest edition considering the gust wind speed as per IS 875 prevailing in the region.
- The steel used in the construction of the masts shall comply with IS 2062 grade E350 / BS EN 10025 or Equivalent having minimum yield strength of 350 N/Sq. mm.
- The High mast shall be of continuously tapered, polygonal cross section, presenting a good and pleasing appearance and shall be based on proven In-Tension design conforming to the standards referred to above to give an assured performance and reliable service.

- The mast shaft shall be manufactured from high tensile steel plates confirming to IS 2062/ BS EN 10025 having minimum yield strength of 350N/Sq.mm and silicon content less than 0.06%.
- For the environmental protection of the mast, the entire fabricated mast shall be hot dip galvanized internally and externally having a uniform average coating of 85 microns for plates more than 6 mm and 70 microns for plates 6 mm and less thickness. The Zinc shall have minimum 99.995% purity confirming to IS 209.
- The length of any individual segment shall be such that it can be easily transported and erected. All similar parts shall be made strictly inter-changeable. Mast segments, as far as possible, shall be fabricated in single piece. In case of restriction due to the size of hot dip galvanizing bath, pole segments having outer diameter more than 1mtr may be fabricated in two halves and seamlessly welded after galvanizing. After seamless welding of both halves, surface of the welded portion shall be cleansed and prepared. Two welded portions shall be galvanized by suitably dipping in hot zinc bath or by metallizing using molten zinc technique. For metallizing, the process as per ANSI/AWS WCZ/D19.0-72 or other National/International standard/Guidelines shall be followed. The thickness of zinc coating by metallizing shall not be less than the minimum specified for hot dip galvanizing.
- The masts sections shall be joined at site by slip-stress-fit method and minimum overlap distance shall be 1.5 times the diameter at penetration.
- The mast structure shall be suitable to sustain an assumed maximum reaction arising from a wind speed as per IS 875 Part-3 2015 (three second gust) and shall be measured at a height of 10 metres above ground level.
- The design life of the mast shall be 25 years. The force co-efficient taken for design of the twenty-sided polygonal structure is to be established from the wind tunnel test data.
- All welding shall be undertaken and performed as per WPS/PQR in strict accordance with BS 5135.or AWSD1.1.
- The head frame cross arm brackets shall be of suitable steel construction.
- The high mast manufacturer should have in-house civil, structural and product design facilities and the shaft is to be manufactured from ISO 9001, ISO 14001 and ISO 45001 certified factory taking care of all aspects of design, quality, environment and safety. The Luminaries supplier shall have their own in-house testing facilities for testing of photometry, other electrical and mechanical parameters of luminaries with facilities to prepare illumination design for said application.
- All MS parts including hardware shall be hot dip galvanized as per BSEN-ISO1461 or equivalent.

• Platform and Head frame of the Mast.

• Stadium mast shall have a fixed head frame at the top of the mast. The head frame shall be with a 15-degree tilt for aiming the luminaries to the proper points. The tilt also helps the maintenance man, while working on the top.

- The head frame shall have a shaft section like other mast sections in the middle and cross arms to mount required number of luminaries. Suitable provision shall be provided in the cross arms for fixing of luminaries and support the cables. Suitable opening on each side of the shaft and window in back side is to be provided to take and facilitate passing the cables to the luminaries through cross arms.
- An inspection opening shall be provided on the head frame shaft. Support shall be welded on the head frame shaft to suspend the luminaire cables from the top. Cables are to be bunched and supported with stainless steel suspension ropes of suitable length. No other equipment shall be mounted in the path of the cables inside the mast as it will affect the safety of electrical cables for the luminaries.
- Lightning finial shall be provided on the mast top of the shaft. Provision to be made on the top cross arm to mount the aviation obstruction light accessible from the ladder.
- A suitable platform shall be provided on top of the mast. The platform shall be such that the maintenance man
 can safely stand on the platform and work. The platform shall have protective railing on three sides for safety
 purposes. There shall be ladders from the platform to the top of the head frame for access to the luminaries
 mounted on the cross arms. Safety rope is to be provided to hook the PPE (Full body harness).
- The platform shall have suitable docking facility for the man rider unit to enable the maintenance man to enter the platform from the man rider unit.
- The connection between the head frame and mast top shaft is by a flanged joint and bolted together. No slip joints in this position shall be used.
- Access to the mast head frame shall be by a detachable and mobile man-rider unit with a minimum safe load carrying capacity of 300 Kg. The unit shall be of galvanized steel construction with twin cage arrangement along with spring loaded wheels encasing the mast shaft for proper balancing and to avoid swaying of cage while climbing. Suitably rated motor and double drum winch shall be installed in the base of mast. The hoisting arrangement shall comprise of marine grade stainless steel wire ropes and cast aluminum pulleys. The unit will have a climb rate not in excess of 9 meters per minute and shall contain required safety features. The Man-rider unit shall be common for all high mast.
- Access to the floodlights on the head frame shall be by a minimum number of four vertical ladders of the full head frame height.

<u>Man rider Unit</u>

- Access to the mast head frame flat form shall be by a detachable and mobile man-rider unit with a minimum safe load carrying capacity of 300 Kg. The unit shall be of galvanized steel construction with twin cage arrangement along with spring loaded wheels encasing the mast shaft for proper balancing and to avoid swaying of cage while climbing. Suitably rated motor and double drum winch shall be installed in the base of mast. The hoisting arrangement shall comprise of AISI 316 grade stainless steel wire ropes of 8 mm diameter and cast aluminum pulley with gunmetal bush bearing. The unit will have a climb rate not in excess of 9 meters per minute and shall contain required safety features. Man rider will incorporate secondary fall arrester system for protection against failure of the main rope.
- Man-rider should be detachable type with wheels for moving from one location to other and common for all the masts of the stadium.

 A portable control box fabricated out of 14swg CRCA sheet housing and finished with powder coating of shade 631 as per IS:5 comprising 32A TPN MCB incomer, contactors suitable for the rating of motor for raising and lowering operation of the man rider. Push button to raise and lower the man rider is to be provided with 5 m cable to operate from a distance. There shall be 32 Amp TPN plug wired to the control box to take power to control box. A Three pin socket is to be provided on control box to hook the motor plug.

• Aviation Obstruction Light

 Supply of Single dome aviation obstruction lights of type LED AOL, make shall be BAJAJ /BINAY/ALTOS or equivalent. Two numbers per mast.

LED FLOODLIGHTS

1500WLED floodlight luminaire -Specification:

- Powder coated aluminum die-cast housing.
- Modular structure for a better heat management.
- Easy heat dissipation helps to extend Lifetime.
- Convenient for installation & maintenance.
- Front glass: heat resistant toughened clear glass fixed with SS screw.
- LED make: Osram / Cree / Lumiled
- The driver is specially designed to have built-in surge voltage, open/short circuit protections.
- External surge protection to be provided for additional safety.
- Luminaire is provided with a MS mounting bracket
- Luminaire Lumen > 100
- CRI: 80, CCT: 5600 deg. K.
- Ingress Protection: IP66
- Mechanical impact protection: IK08

HIGH MAST LIGHTING DISTRIBUTION BOARD (HMLDB)

Outdoor type High Mast Lighting Distribution Boards (HMLDB) shall be placed near the near each high mast. HMLDB shall be outdoor type, floor mounted, metal enclosed, single front, vermin proof with degree of protection, IPW55 as per IS2147.The frames shall be enclosed with sheet steel of not less than 2.0 mm thickness with rubber gaskets all round the perimeter of removable covers and doors.

Bus bars shall be air insulated and made up of electrolytic grade aluminium. Bus bars shall be PVC sleeved with colour strips of red, yellow, blue and black and the same shall be arranged in accordance with IS375.

MAIN LIGHTING DISTRIBUTION BOARD (MLDB)

Outdoor type Main Lighting Distribution Board (MLDB) made out of CRCA Sheet with powder coating (RAL 7032) of suitable size with canopy having IP 55 protection for accomodating the following component. The MLDB shall be installed at a suitable location and shall be erected on cement concrete foundation complete with painting,

interconnections, earthing complete as required including the detachable gland plate for incoming and outgoing cables entry. 415 V, 3-phase, 50Hz, outdoor type pedestal mounted.

CABLES

Following cables are included in bidder's scope:

- a) From HMLDB to to flood lights on masts.
- b) From MLDB to to HMLDB on masts.

<u>Earthing</u>

Each tower and HMLDB shall be earthed by means of earth pits each with 40mm dia GI pipe with charcoal/coke and salt as required as per IS 3043. There shall be 2 pits for each mast and 2 earth pits for both HMLDB/MLDB.

LIST OF MAKES:

Following are the list of makes for major items as approved for this tender:

- a) High masts: Bajaj / Valmont / Lysaught
- b) 1500W LED Flood lights: Bajaj /Philips / Disano
- c) LED make : Osram / Cree / Lumiled
- d) Cables: Polycab / Havells / KEl/Avocab
- e) Switchgear components: L&T / C&S / MDS-Legrand / Havells / GE/SIEMENS.