

Prebid minutes for "Installation of Navigation Buoys in River Mahanadi (NW-64)"

TENDER No: IWAI/Tech/NW-64/Buoys/2023

Date of pre-bid- 08.02.2024 @ 15:00

Sr.No	Section No. Clause, Sub Clause No and Page No. of Tender	Tender clause description	Query	Reply to queries
1	3.1. BUOYS: a)	The main hull shall be framed with Marine Quality Mild steel (BIS-2062) plates and shall be all welded type. Stiffener angles shall be welded inside the buoy body. The buoy shall be well balance and shall remain vertical without tilting when it is put in use. During routine maintenance, the buoy should be able to take the load of 4 persons standing on the structure without tilting. The design of the buoy shall ensure maximum stability during rough sea conditions, especially during the severe monsoon period in the area.	Since there is no drawing enclosed, it is important that the bidder should submit design of the buoy which is proven in river water in India for more than 5 years minimum. The vendor should propose the buoy design with documentary satisfactory in any river evidence that the type of buoy proposed is working satisfactory in any river within Indian Territory for more than 5 years.	Successful bidder will propose the design and get it vetted through IR Class.
2	b)	The tail tube of the buoy shall be of detachable type and bolted to the buoy body with adequate stiffeners. Cast Iron ballast weights shall be provided and bolted at the bottom of the tail tube. The detachable superstructure shall be of mild marinated steel angles used in the fabrication shall be new and of IS 2062- grade of tested quality and normally used in the offshore marine industry.	Since the tail tube type of buoy not suitable for river application, The same need to be modified as per the design requirement and as approved by approving authority like DNVGL/BBIS/IRS or any other.	Kindly refer reply at S.No. 1
3	c)	<b>STABILITY OF BUOY AND DESIGN DRAWINGS :</b> The buoy shall be tamperproof and have adequate positive buoyancy i.e. it should be capable of righting itself if extra load is applied temporarily. Also, the buoy shall be highly stable with maximum; righting at high angles of heel (Stability calculation and heel angle etc. to be submitted along with the offer) Also G.A. Drawing showing full assembly of the buoy with dimensions must be submitted with the offer.	Do we have to offer design only which have been proven in the Indian riverwaterways or we can submit any other design which is not been tried out before?	Kindly refer reply at S.No. 1
4	3.2 GENERAL PARTICULARS OF THE BUOYS: Location	River Mahanadi (NW-64) Start Point u/s of confluence with Sea at ( Lat 20°17'36.46"N ,Long 86°42'26.48"E) and end point being Marshaghai bridge ( Lat 20°24'25.89"N , Long 86°29'42.31"E) Tidal variation : 0.78 m to 2.32 m Maximum and Minimum available depth : 0.7 m to 19.9 m		No queries raised
5	Purpose	To demarcate the Navigational channel		No queries raised
6	Colour of buoys	As per IALA system "A"		No queries raised
7	Focal Height (approx.)	6 m	This need to be as per IALA calculation for 3 NM lantern.	Kindly refer reply at S.No. 1
8	Buoy Body Diameter	3m	The buoy body should be 3 m width or diameter should be minimum depending upon design and type offered	Kindly refer reply at S.No. 1

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9	Overall height of buoy from Tail tube base to top of superstructure	10m	The overall height of the buoy should not be limited to 10 m it should be subject to the design and calculation to be done according to IALA regulation and to be approved buoy approving agency but one should meet the requirement for the design criteria given in the Tender, whatever height comes up should be consider as sufficient.	Kindly refer reply at S.No. 1
10	Weightless moorings (approx.)	4Tonnes	The weight of the moorings should be as per the design calculation to be approved confirming to IALA by third party nominated by IWAI.	Kindly refer reply at S.No. 1
11	Main Hull	Dished, welded and radial framed construction of marine quality BIS-2062 mild steel plates.	This main hull design and construction should be as per the proposed design dullyapproved by third party and IWAI as per IALA calculation	Kindly refer reply at S.No. 1
12	Superstructure	Detachable, Bolted and Welded construction of IS- 2062 marine grade M.S. angles.	Detachable, Bolted and Welded construction made of self-pigmented rotomoulded polyethylene with the shape of PILAR/CANE/CONE for better visibility confirming to IALA Regulatory. The Superstructure should have in-built provision for Radar Reflector Super Structure should have in-built remoulded nonmetallic threaded bosh for fixing lantern guard top mark and Marine Lantern	Kindly refer reply at S.No. 1
13	Lifting Eyes	4 Nos.	The buoy shall be provided with 2 nos. Mooring eyes and 4nos. lifting eyes. The mooring and lifting eyes shall be adequate size and shall be welded on doubler plates. The mooring and lifting eyes shall carry load test Certificates from reputed classification society. S.S. bush shall be fitted from the inner part of the mooring lifting eyes.	Kindly refer reply at S.No. 1
14	Mooring Eyes	2 Nos.	The buoy shall be provided with 2 nos. Mooring eyes and 4nos. lifting eyes. The mooring and lifting eyes shall be adequate size and shall be welded on doubler plates. The mooring and lifting eyes shall carry load test Certificates from reputed classification society. S.S. bush shall be fitted from the inner part of the mooring lifting eyes.	Kindly refer reply at S.No. 1
15	Mooring chains	<ul style="list-style-type: none"> <li>i. Bridle chains 2 Nos. x 6mts x 38mm closed link type with end links.</li> <li>ii. Pendant chain 1 No. x 27.5mts x 38mm closed link type with end links.</li> <li>iii. Triangular piece</li> <li>iv. Forelock end shackles to suit, provided with lock pin (split pin type) on free end.</li> <li>v. Swivel piece to suit</li> </ul>	<p>The mooring chain should be confirming to ground holding calculation confirming to IALA as per the environmental data of the river condition and same has be approved by third party agency</p> <p>Bridal Chain 2 Nos. 6 m 38 mm</p>	Kindly refer reply at S.No. 1

16	Cast Iron Sinker (Mushroom type)	3.5 Tones with suitable Eye.	As per the approve design	Kindly refer reply at S.No. 1
17	Radar Reflector	To be provided Radar cross-section 1.5 sq.mtr		Kindly refer reply at S.No. 1
18	Top marks	As per IALA system "A" (Can for port side Buoys, Cone for Starboard Buoys.	Maintenance free PE rotomoulded self-pigmented top marker as per IALA System "A"	Kindly refer reply at S.No. 1
19	<b>3.3. BUOY BODY:</b>	The buoy body shall be fabricated from brand new marine quality mild steel plates to BIS-2062 specification. Top and bottom dish ends shall be of 10mm thick and cylindrical side shell shall also be of 10mm thick and mild steel plates. The diameter of the channel buoy shall be 3m with 10 Nos. of Zinc anode weight of 5 Kg to be provided at each buoy. Standard circular marine- grade rubber fender to be provided. Two numbers of water tight tamperproof manhole shall be provided to have access to the inside divided into two No. of compartments which shall be a bulkhead with tightening hole. One ladder made of M.S. Flats and rods shall be provided inside the buoy body below the manhole, for inspection, etc.	Buoy body shall be fabricated from the steel plate of 10mm thick as per the dimension and design dully approve by third party inspection agency.  2 nos. of water tight temper proof manhole shall be provided to have excess to inside of the compartment which shall be a bulk head with tightening hole.  One ladder made of HDPE solid flat and rod shall be provided on the super structure to reach marine lantern	Kindly refer reply at S.No. 1
20	<b>3.4. TAIL TUBE:</b>	The buoy body shall have an integral flange welded to the main hull with adequate stiffeners. The tail tube shall have 460mm diameter and 12mm thick pipe made of new brand mild steel plate with adequate stiffeners. The height of the tail tube shall be approx 1.5m. The bottom of the tail tube shall have 14mm thick and 700mm diameter mild steel plate to be welded. Cast Iron ballast weight/segments of required weight for the buoy shall be adequately attached by bolting at the lower end of the tube.	Since the tail tube type of buoy not suitable for river application, The same need to be modified as per the design requirement and as approved by approving authority like DNVGL/BBIS/IRS or any other.	Kindly refer reply at S.No. 1
21	<b>3.5 MOORING AND LIFTING EYES</b>	The buoy shall be provided with 2 nos. Mooring eyes and 4nos. lifting eyes. The mooring and lifting eyes shall be adequate size and shall be welded on doubler plates. The mooring and lifting eyes shall carry load test Certificates from reputed classification society. S.S. bush shall be fitted from the inner part of the mooring lifting eyes.		Kindly refer reply at S.No. 1

22	<b>3.6. SUPERSTRUCTURES: a)</b>	<p>The superstructure shall be 4 sided and shall be fabricated of brand new marinised mild steel vertical angles of 75 x75 x 8 mm and horizontal angles of 65 x 65 x 6 mm sizes. The structure shall be capable of supporting the top mark, radar reflector, self- contained LED lantern etc., along with all associated fittings. The superstructure shall be bolted to the buoy body using S.S.bolts, nuts and washers.</p> <p>The marine mild steel ladder of M.S.angle construction of adequate length and strength shall be provided to give maintenance access to the navigation equipment. The mild steel ladder shall form one side of the superstructure.</p>	<p>Detachable, Bolted and Welded construction made of self-pigmented rotomoulded polyethylene with the shape of PILAR/CANE/CONE for better visibility confirming to IALA Regulatory</p> <p>The Superstructure should have in-built provision for Radar Reflector</p> <p>Super Structure should have in-built remoulded nonmetallic threaded bosh for fixing lantern guard top mark and Marine Lantern</p>	Kindly refer reply at S.No. 1
23	<b>b) TOP MARK</b>	<p>On the buoys, one tamperproof top mark, as required and as per IALA (International Association of Lighthouse Authority) System "A" shall be provided and the same shall be properly bolted to the super structure. The top mark shall be fabricated out of suitable material and colored as per IALA system "A".</p>		Kindly refer reply at S.No. 1
24	<b>c) PRESSURE TEST:</b>	<p>The buoys shall be tested to a pressure of 2Kg.per sq.cm. for not less than 30minutes, to detect any leak in the weld lines and should be duly certified by the I.R.S.</p>	<p>The buoys shall be tested to a pressure of 0.2 kg/cm<sup>2</sup> as per the standard procedure</p>	Kindly refer reply at S.No. 1
25	<b>3.7. PRE-TREATMENT AND SURFACE PREPARATION:</b>	<p>Slags, burns, loose rust and other foreign substances shall be removed from the insides of dished ends and cylindrical portion of the buoy body by hand/power tools. After fabrication of the complete buoy body supporting brackets on the body, lifting and mooring eyes, structure support brackets manholes, top superstructure, etc. the complete external surface of the buoy body shall be blasted to white metal as per Swedish Standard SIS 05.5900-SA-2.5. Within four hours of blasting of the complete internal surface of the buoy body including Tail Tube supporting brackets, manhole cover, the top superstructure etc. to be painted as per the painting schedule given in "J" shall be compiled with.</p>		Kindly refer reply at S.No. 1
26	<b>3.11. SINKER:</b>	<p>The buoy shall be provided with one Cast Iron Sinker (Mushroom type) of not less than 3.5 Tones for fairway buoy. After thoroughly cleaning, the sinker shall be given two coats of bituminous paint.</p>	<p>As per the ground holding calculation confirming to IALA</p>	Kindly refer reply at S.No. 1

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27	<b>3.12. SOLAR POWERED NAVIGATIONAL LIGHTING EQUIPMENT:</b>			
28		Colors : White, Red and Green	The white light for fairways buoy and Red and Green for Channel buoy	Kindly refer reply at S.No. 1
29		Range >3NM	5 NM for fairways buoy and 3 NM for channel buoys	Kindly refer reply at S.No. 1
30		Solar Panel : Mono-crystalline of suitable capacity	In-built Mono-crystalline of suitable capacity	Kindly refer reply at S.No. 1
31		Battery : 12 V of suitable capacity, type sealed maintenance free, more than 1000 charge, discharge cycle (28AH for channel buoy, 40 AH for fairway buoy.	In built battery suitable for autonomy period more than 20days autonomy period	Kindly refer reply at S.No. 1
		Remote Control capabilities : Remote Monitoring and control	Please confirm the area of installation is within the GSM range than we can offer GSM monitoring or else please confirm the type of monitoring and control to be provided.	Kindly refer reply at S.No. 1
		Synchronization : Via hardwire or GPS.	The Synchronization for buoys only recommended via GPS	Kindly refer reply at S.No. 1

<i>06/3/24</i>	<i>Alrawi</i>	<i>P.N.W.</i>
P Srinivasa Director (Hy)	ASHUTOSH GAUTAM Member(Technical)	PRAVEEN NANDWANA Member(Finance)

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