

#	Reference	Clarifications / Question	Responses / Confirmation / Addendum
1	General	<p>Kindly confirm following systems are required for the K. Kandū Oiy Giri.</p> <p>A. Air- Conditioning System and proposed locations (If applicable)</p> <p>B. Mechanical Ventilation System and proposed locations</p> <p>B. Fire Safety Design</p> <p>D. Fire Detection and Alarm System</p> <p>E. Electrical systems</p> <p>F. Emergency Lighting System</p> <p>G. Lighting and Power System</p> <p>H. Earthing System</p> <p>I. Lightning Protection System</p> <p>J. Emergency Electrical Supply (Generator Set)</p> <p>K. Communication and GPON in building network</p> <p>I. Building Access Control</p>	<p>Clarification 02 Reference -26</p> <p>No emergency gen set needed. Rest should be included.</p>



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		<p>J. CCTV System</p> <p>K. Public Address System</p> <p>L. Automatic Barrier Gate System</p>	
2	General	<p>As per the referenced clarification following systems are not required for all lots. Kindly confirm.</p> <ol style="list-style-type: none"> 1. Fire Fighting 2. Fire Detection 3. Building Access 4. CCTV 5. Public Address 	<p>Clarification 02 Reference -47</p> <p>Item 1,2,3 4 should be included</p>
3	General	<p>Is it possible for us to provide Ammonia Cascade system as an alternative proposal? Or shall we furnish best possible solution from both ammonia and ammonia cascade systems, please clarify.</p>	<p>Clarification 02 Reference -76</p> <p>It is possible, you can do both and submit, but cold store must be run without running freezer system, our preference is ammonia system, cascade system also ok</p>
4	General	<p>Furthermore, detailed spec</p> <p>- The products to be stored</p> <ol style="list-style-type: none"> 1. The storage capacity in tons for each product? 2. The storage conditions Ex :-(-18; +4...)? 3. The layout plan of the warehouse building? If not available, the full dimensions. Do you've CAD Drawing regarding this, please feel free to send us. 	<ol style="list-style-type: none"> 1. All lots in cold rooms, tuna is stored in steel mesh cages, which can store 1200 KG, it will be stored in 3 layers. One over another Storage conditions are. 2. Tuna arrived to store after segregation of various sizes, -8oc to -10oc. It must reach -20oc in 16 hours 3. Ideal size of cold rooms of inner dimensions are L=29 meter, W14.5-meter, H 5.5 meter 4. Item items are frozen Tuna from 1.5Kg to 6kg. Above 6kg Yellow fin 5/6. Blast freezing is 10-ton batch. Per 8 hours.



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		<p>4. What are the ideal items when you are going to store ? More information like fish type – Ex :- Tuna.</p> <p>5. Blast freezing capacity/batch</p> <p>6. Freezing time/batch,</p> <p>7. Power supply(voltage/Hz/phase), etc. What is the temperature range?</p>	<p>7. Voltage 400V 3 Phase 50 Hz, All cold rooms should be able to maintain -25oc.</p>
5	K. Kandu Oiy Giri	In scope, minus 20 thermal / center temperature within 10 hrs mentioned. But in specification, minus 18 within 8 hrs mentioned. Please clarify which one is correct	10 hours is correct
6	K. Kandu Oiy Giri	As per project specs the Single room device negative Lotus =280 kw for quick freezing and 31.6 kw for refrigerator, with total capacity 250 kw ,same had been followed ,please confirm our understanding or advise another .	The requirements are 200 tons of cold storage at maintain@ -25°C daily arrival rate for cold store expect 20 Tons and arrival temp expected be -15oc. Cold must be able to maintain or bring arrival Tuna of at -15oc, and bring down to -25oc in 18 hrs time. For Blast Freezer shall be able to freezer 20 tons/10 hours of blast freezer (center temperature -20°C) Tuna arrive to Blast freezer assume to be taken +16oc.Size of Tuna varies between 2KG to 6kg. Our Rough Calculation are we need Cooling capacity of Blast Freezer @Ct35oC/Et -37oc Should have not less than 280KW. Cold store minimum requirement is @Ct35oC/Et -37oc 35KW. You may decide what is actual size of Unit will be based on your Calculations
7	K. Kandu Oiy Giri	What is the temperature of Blast freezer?	'-25oc
8	M. Mulah	For Brine tank material ,please be noted that two options are available	Brine Tank shall be made of either SUS 316 L or Carbon Steel A 106 thickness shall be 8/9 mm



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		<p>Option -01 :- floor a wall to be made of reinforced concrete and perform the needed water and heat insulations</p> <p>Option -02 :- floor and wall insulated carbon steel</p> <p>Please advise also, please advise regarding to the need for insulated roof panel (tank cover)for these tanks ,as the roof insulated panel not shown in the received tender drawings</p>	
9	M. Mulah	We would like to clarify the responsibility for supplying the sodium chloride for the brine tanks. Since this is a consumable material (salt must be added regularly to maintain the concentration), we assume that it will be in the scope of the end-user to supply the sodium chloride for operating the tanks. Is this correct?	Contractor should supply
10	General Mechanical	Regarding to tender BOQ ,kindly provide us with some extra information about the below items which mentioned in the BOQ ,as found not needed technically to the system 01-Nurse Tank 02-Pump out compressor	<p>Nurse Tank means Tanks or Vessel to be used evacuate all refrigerants in the system to be pull out in case of major break down such as valve break up or large leak in the system.</p> <p>Pump out compressor means unit may use to pump out all refrigerant, which may not be necessary</p>
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12	General Mechanical	Regarding to tender BOQ ,kindly provide us with some extra information about the below items which mentioned in the BOQ ,as found not needed technically to the system 01-Nurse Tank 02-Pump out compressor	Nurse Tank means Tanks or Vessel to be used evacuate all refrigerants in the system to be pull out in case of major break down such as valve break up or large leak in the system. Pump out compressor means unit may use to pump out all refrigerant, which may not be necessary
13	General Mechanical	In technical specs for cold storage and quick freezer of KOG the net height of Blast freezer room is 5m however in the drawing is 4.333m, please clarify which one shall be considered.	Cold store height is 5 meter; hence freezer room shall be 2-meter, freezer length and width increase to compensate loss of height
14	K. Kandu Oiy Giri	For Lot-02, as per project specs "Due to the high temperature in the Maldives all year round, it is recommended to enlarge 1.2 times the selection, MYCOM/SABROE/GRASSO or equivalent evaporative condenser, heat exchange 1200KW, " please be noted that the total cooling load system is 250 kw as per project specs clause no.07 (7. Cold Room Design Load) ,however the same (1200 kw) had been considered in the design with conjunction to 1200 kw condenser as a standby as per received replies previous clarifications -01 ,,please confirm our understanding or advise another . Also as per our understanding that 1200 kw already considered the 20 % spare capacity, please confirm our understanding or advise another ."	Condenser shall be decided with corresponding capacity of Cooling load needed to system. 25% additional load to be added min. Whole idea is like, we prefer to have Three condenser, Two must have system required capacity and other one is like stand by one, that allow system run full capacity even one taken out for maintenance.
15	General	Please confirm again if the blast freezer patch capacity is either.	Correct is 10 ton per 8 hrs.



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		- 10 tons per 8 hours bath Or - 20 tons per 10 hours batch.	
16	General	We do not believe technically that we will be able to reach -20oc product center temperature with air temperature -25oc. We recommend design blast freezers with -35oc air temperature at the outlet of the evaporator. Is this acceptable	We can accept evaporation temp -35oc to get core temp -20oc of the product
17	General	Please be noted that ASTM A106 standard is for carbon steel seamless pipes. Can we offer carbon steel JIS G3101 SS400 standard instead for brine tank construction?	Can be used.
18	General	Kindly be noted that supply of sodium chloride by the contractor be limited only to the initial fill of the tanks and the commissioning period ,please confirm.	That's for only commsioning, after comissioning we will take of it
19	General	We already include a liquid receiver sized to accommodate the entire charge of ammonia, as mentioned in project specs. Is the nurse tank and pump out compressor is still required?	Not required
20	General	If it is required, what is the preferred location for the nurse tank?	Not required
21	General	If nurse tank is required, can an NH3 pump be used to transfer the refrigerant, instead of a pump out compressor?	Not required



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		As storing the ammonia at liquid phase is more applicable more than storing at gas phase ,as this lead to optimized storage size	
22	General	We prefer evaporators to be installed above the trolleys in the room. This will require a blast freezer height of approx. 4.5m. Is this acceptable?	Acceptable if it can get what it required
23	General	Please confirm our understanding that the system manufacture design /calculation will superseded the equipment size mentioned in the project specs to optimize the cost under conditions of ensuring safety factor in condenser size 25 % in addition to standby condensers & compressors and liquid pumps ,hence we can select the optimized sizes for every equipment and this understood from clarification -02 reply no. 98 & 69 & 88 ,and sue the calculations will be based on the Tuna product and ensure the room & product temp. Required as per Tuna patches mentioned at every place .please confirm to optimize the design & equipment selection accordingly .	You may go on optimize the design at every place, ' condenser, pumps we like have such as duty two stand by 1, making sure in case of one down still we will be able to run system full capacity.
24	Koodoo	For Lot-01-as per clarification 02 reply no. 50 ,the compressor room is not located at contractor scope ,hence all civil works and MEP works(drainage ,water supply ,emergency eye wash & shower ,lighting ,Fire fighting & alarm ,...etc.)Are excluded , only we will add the chain	You can, you may could give us drawing for compressor room, idea is existing plant we have space even laid foundation for compressor room, but in case of Koodoo we feels that it is far and lot pipe to be reached there, Our idea is now build compressor room behind all cold rooms which save cost, you may add compressor room, we could later decide



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		block hoist with rails at compressor area inside the compressor room ,as per clarification #02 reply no. 132 please confirm	
25	Lot-01	As per clarification #02 reply no. 92 ,"The existing fire line(100 mm dia) is on the road under .5-meter ground level, which are going be under building, we like have fire hydrant connected to hose of hose box shall be fixed which have automatic recess swinging, also near each box shall be 3 units of ABC powder" ,hence we added only the pumps as per client request , and no civil works added to the project, but the existed pump room drawings hadn't received for checking and selecting the proper pump required for the existed pump room , so we believe as no fire pumps installed hence no existed FH pipe line ,then we considered our own FH line feed the fire hydrants located at out scope	Just bring pump and accsories the piping connection and bnuidling is there at the corner or main wharf
26	Lot-01	Fire pump house ,however as per client clarification02 reply no. 94 ,the pumphouse is existed at lot-01 (but no drawings available ,and not found while site visit) ,so we prefer to execute one to accommodate the new pumps ,please confirm or provide us with existed pump house and how water handled from sea till the pumps	Just bring pump and accsories the piping connection and bnuidling is there at the corner or main wharf
27	Lot-01 & 03	As per clarification -02 reply no. 94 &117 ,as the water level will be below the pumps level hence	Using normal end suction pups with suction line and basket (at suction line) is accepted



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		please confirm using UL/FM vertical turbine pumps as per NFPA Requirements (but this is very high cost) or using normal end suction pups with suction line and basket (at suction line)	
28	Lot-03	As per clarification -02 reply no. 117 ,please confirm our understanding that pumps will be installed at cantilever platform above the sea directly . As my we relocate the pump house to be inside the project and use underground pipes (2X10 ") TO take the water from the sea to small receiving chamber located below pumps and then pumps suction freely from this chamber ,please confirm which proposal required .	TO take the water from the sea to small receiving chamber located below pumps and then pumps suction freely from this chamber . This proposal is ok
29	Lot-02	Regarding to clarification 02 reply no. 176 ,please be noted that the requested generator is not requested at employer requirements or in drawings ,and as per site visit &our understanding this additional generator have aspare location inside the existed power generation plant ,and to be supplied and installed by the client for interfacing with exited SWG &other electrical services ,hence only supply &installation of cable from new project till the existed SWG (including the CB) ,please confirm .	Follow as it said
30	Lot-03	We expect the need for drainage /sewerage lifting station(and already considered) ,as the project	Sewer system can be connected public system



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		located at the end point of drainage network ,hence had to be considered ,please confirm	
31	Lot-03	As we have a lot of buildings away from each other's ,hence we will segregate the rain collecting tanks into 3 tanks (to locate tanks near the buildings and connect all tanks to one tank located near the filtration unit ,these tanks will be 100 m ³ +75 m ³ +25 m ³ ,hence the total capacity 200 m ³ (which mentioned at clarification 02 reply no. 114 is satisfied ,please confirm	Better install one large tank than small tanks
32	Lot-02	No need for rain water harvesting system ,as per clarification-02 replies received no requirements mentioned about this system ,may be cause of small roof area or this system is not used at this island ,hence this hadn't considered at our submission ,please confirm	No need
33	Lot-02	No need for adding sea water washing pumps (35 m ³ /hr) ,as the building area is small and availability of water supply at site ,please confirm	We need sea water pump and contact tank.
34	Lot-01	As per clarification 02 reply no. 50 ,the compressor room is not our scope ,hence please confirm the applicability to install the condensers above the building to optimize the cost by eliminating using separate steel structure for condensers	You can, you may could give us drawing for compressor room, idea is existing plant we have space even laid foundation for compressor room, but in case of Kooddoo we feels that it is far and lot pipe to be reached there,Our idea is now build compressor room behind all cold rooms which save cost, you may add compressor room, we could later decide



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35	Lot 01 & Lot03	As per clarification -02 reply no. 173 ,it is understood that only daily fuel tanks required for each lots ,every lot need 10000 m3 tank (or 2X 5000 M3) daily tanks and no need for main /bulk storage tanks at both lots ,as no received required capacity about these main /bulk /storage tanks ,an we are confused as Lot -01 have main fuel tanks ,hence it is ok may no need for Bulk storage tanks ,but for Lot -03 no main fuel storage tanks existed their as per site visit, please confirm our understanding that main /bulk /storage fuel tanks are not required for both lot-01 &03 ,and if required please mention the capacity needed for each Lot	Well it is actually 10m3 x 2 tanks as daily tanks
36	Lot 01 & Lot03	As per clarification -02 reply no. 174 ,about the required fire fighting system needed for fuel tanks ,it is clearly mentioned that the fire fighting need for main fuel tanks ,hence not needed for daily tanks ,till this moment our understanding that no main /bulk /storage tanks required for any of lots ,hence no need tanks fire fighting system ,please confirm	We need fire fighting system near main fuel tanks
37	Lot 01 & Lot03	With conjunction to previous points and Clarification#02 reply no. 174 ,please mention the required fire fighting system for main fuel tanks (if need)	We need fire fighting system near main fuel tanks
38	All Lots	As per clarification -02 reply no. 127 ,that contractor to design the optimized insulated	150mm panel is ok



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		panel properties for cold stores to satisfy the design and required room & product temp. ,hence after checking with the Ref. System design found that insulated panel walls /ceiling with thickness 150 mm & doors with thickness 150 mm ,please confirm using the same based on our confirmation to satisfy the operation	
39	All Lots	Please clarify spaces need fire alarm system	In the control room.
40	All Lots	As per clarification -02 reply no. 99 ,as ante room temp. Required is +12oc~18oc. ,hence may propose light sandwich panel for ceiling /wall less than used in cold stores ,to optimize the cost ,please confirm	We are ok ante room panels are lessel than cold room panels
41	For Lot-01	For the existed ante room ,please be noted that as evaporator units serving the existed cold stores already existed hence the ceiling installation level will be directedly below the existed valve stations serving the existed cold stores ,also any other existed service rerouting due to installing this ceiling /adding internal cladding insulated walls will be by client ,please confirm	No Anteroom required in the brine tanks side where Valve manifold are located.
42	All Lots	As per clarification -02 reply no. 190 ,that structural loads (Live load, Colateral load,MEP Loads, Wind load, Seismic Load,...) where the reply is (loads are specified io our specification sheet) while the specication not mention the	Wind load should 140KM/Hr. (See below table for other loads)



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		loads So. Please Clarify the applied loads on structure.	Building Element	Phenomenon Controlled	Serviceability parameter	Applied Action	Element Response *
			Roof Cladding	Indentation	Residual Deformation	Qk = 1 KN	Span/600 but <0.5mm
				De-coupling	Mid-span deflection	G, 0.7xQk	Span / 120
			Roof Members (Trusses)	Sag	Mid-span deflection	G, 0.4xQk	Span / 300
			Ceiling supports	Sag / ripple	Mid-span deflection	Gk	Span / 360
			Columns	Sidesway	Deflection at top	Ws	Height / 500
			Portal Frames	Roof Damage	Deflection at top	Ws or Es	Spacing /200
			Lintel beams	Doors / Windows jam	Mid span deflection	Ws	Span / 240 but < 12mm
			Walls (Face Loading)	Discernible movement	Mid height deflection	Ws	Height / 150
				Supported elements rattle	Mid height defection	Ws	Height / 1000
				Soft body impact	Mid height deflection	0.7 KN	Height /200 but <12mm
			Masonry /concrete walls (in-plane)	Noticeable cracking	Defection at top	Ws or Es	Height / 600



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			Masonry /concrete walls (out of plane)	Noticeable cracking	Deflection at top	Ws or Es	Height / 400
			Beams	Sag	Mid-span deflection	Gk, 0.4xQk	Span / 500 (line of sight) Span / 250 (perpendicular)
			Normal Floors	Noticeable Sag	Mid-span deflection	Gk, 0.4xQk	Span / 400
				Vibration **	Static mid-span deflection	1.0 KN	< 1.0mm
			Specialist Floor systems ***	Noticeable Sag	Mid-span deflection	Gk, 0.4xQk	Span / 600
			Floors for plant access	Sag	Mid-span deflection	1.0 KN	Span / 250
			Handrails – post and rail system	Side sway	Mid-span system deflection	1.5 KN/m	Height / 60 & Span / 240
			<p><i>*Allowance for long and short term creep effects shall be considered.</i></p> <p><i>**subject to the use of the floor and the frequency of vibration requirements of any installed plant and equipment. Where there is any specific floor vibration requirement and static deflection greater than 1.0mm a dynamic assessment shall be undertaken for vibration</i></p>				



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			<p><i>behavior. Any structural member with a clear span greater than 12.0m shall be subject to dynamic vibration review.</i></p> <p><i>***deflection and liveliness control of any specialist floor shall be confirmed with the owner for any specific requirements which may be required for usage and installed plant etc.</i></p>

