

## 2 X 210 MW TENUGHAT TPS-DRY FLY ASH COLLECTION AND DISPOSAL SYSTEM

**The following queries are based on site visit dated 27.03.17**

SL No	Queries/Clarification	TVNL's response
S1	Eco ash Evacuation System: As per site visit, feeder ejector system is installed below ECO hoppers and wet slurry formed is transported to coarse ash tank at ground level below APH hoppers. The space and platform below ECO hoppers is very small to install additional equipments of pressure conveying system. The quantity of ash collected in Eco hoppers is less and is coarser in nature and hence saleability is less. As per customer's site representative, the wet ash evacuation system is working satisfactorily. In view of above, it is proposed that the dry ash conveying system may be removed from the scope and customer is requested to retain the wet ash slurry system below ECO hoppers.	Dry fly ash evacuation from ECO hoppers, APH hoppers, gas duct hoppers & chimney hoppers are part of the Ash evacuation system. They can't be removed from the scope of work.
S2	APH ash Evacuation System: As per site visit, feeder ejector system is installed below APH hoppers and wet slurry formed is transported to coarse ash tank at ground level. The platform below APH hoppers will have to be modified to install additional equipments of pressure conveying system. The quantity of ash collected in APH hoppers is less and is coarser in nature and hence saleability is less. As per customer's site representative, the wet ash evacuation system is working satisfactorily. In view of above, it is proposed that the dry ash conveying system may be removed from the scope and customer is requested to retain the wet ash slurry system below APH hoppers.	
S3	Gas Duct Hopper Evacuation System: As per site visit, hydro ejector based vacuum conveying system is installed below hoppers and dry ash is transported to wetting unit tower. The platform below Gas duct hoppers is above road will have to be modified/lowered to install additional equipments of pressure conveying system. The quantity of ash collected in Gas duct hoppers is less. As per customer's site representative, the ash evacuation system is working satisfactorily. In view of above, it is proposed that the ash conveying system may be removed from the scope and customer is requested to retain the existing system.	
S4	<b>Chimney Hopper Evacuation System:</b> As the ash collected in stack hoppers is very very less, Bidder proposes for retain the existing system and provide manual evacuation in dry form due to space constraint.	
S5	Bidder proposes to route the ash handling pipes taking support from existing structures, pipe/cable racks wherever applicable.	
S6	Bidder proposes that the Intermediate silo can be located beside ESP of each unit and the routing of two ash conveying pipes from Intermediate silos to fly ash silos can be optimised based on space availability at site.	

S7	<p>As per clause 03.01 of page 1 of 5 of Section A of the specification which reads-"Dry Fly Ash Handling System with all its accessories are to be installed in all the two units (2 x 210 MW) of TTPS without replacing / affecting the performance of existing hydro ejector based vacuum type Ash Handling System. It has been envisaged that with the help of inverted Y type / adapter connection to hoppers and branch isolation valves, existing hydro ejectors will be isolated from the circuit."</p> <p>It may please be noted that the outlet of ESP hopper is at EL.(+) 2.5 mtrs only and hydro ejector based vacuum evacuation system is provided without any Y type adaptor and also without any isolation valve between ESP hopper and ash intake valve. Hence, if bidder has to provide Y - type adopter at outlet of ESP Hopper then the existing adopter and ash intake valve along with its piping and fittings have to be shifted. Also the space available below ESP hoppers after installing Y type adopter would be very less to install ash transporter vessels. The other option available is to cut one side plate of ESP hopper above installed heaters in ESP hopper approximately at an elevation of (+) 3.5 mtrs and install ash transporter vessels but in such case the following may please be noted:</p> <ol style="list-style-type: none"> <li>1. The ash collected in bottom heater installed portion of ESP hopper cannot be removed through pressure conveying system.</li> <li>2. The insulation of hopper and hopper will have to be modified.</li> <li>3. During long storage of ash in ESP hoppers, the ash may get cold and pneumatic conveying system may get affected.</li> </ol> <p>In view of above, Bidder proposes the following system:</p> <ol style="list-style-type: none"> <li>1. Provide vacuum pump based ash evacuation system from ESP and gas duct hoppers and modify existing wet ash evacuation tower to collect ash in dry form as well as slurrify the ash through wetting unit.</li> <li>2. Utilise existing Adopter below ESP hopper.</li> <li>3. Utilise existing ESP hopper fluidising blowers and heaters.</li> <li>4. Modify Wet ash evacuation Tower.</li> <li>5. Provide transport air compressors for conveying dry ash from FAE tower to Fly ash silo.</li> <li>6. Thus, only two/three ash conveying pipes will have to be taken out from boiler area instead of 14 nos.ash conveying pipes.</li> </ol> <p>Customer is requested to review our proposal as this would reduce the initial cost and power consumption to customer</p>	<p>The bidder is required to instal the dry ash collection &amp; disposal system and the associated structures so as to isolate the existing wet system &amp; the new system. At a time, either wet system or dry system of ash evacation will work as per requirement of the station.</p>