ABSTRACT

Kalimantan as the largest mining area in Indonesia has a fairly unique geographical conditions. Coal there, are generally located in remote areas far from the ocean. Yet to transport coal to the consumer, it needs to be transported by bulk carrier or large-capacity barges. The way to overcome this problem is to transport the coal through the river using barges first before it transshipped to the mother vessel.

When the transportation of coal by barge having no problem, then the sale will be smooth as well. However, when transportation is disrupted, sales target will be difficult to achieve, beside it will also harm consumers because coal supply should not be stopped or delayed. Constraints experienced by barge is the dry season when the water levels drop dramatically at Barito river. At the moment it happens, the river that can usually be crossed by barge up to 5,000 tons of capacity, can only be passed if the barge is reduced to 2,000 tons of cargo only. Even when the lowest water level conditions occur, the barges will not be able get through at all.

Based on simulation results, the best scenario for PT. ZXC in achieving sales target of 2.5 million tons is to continue to operate all the existing barges at the time of siltation, although the barge can not sail with full load. Because the total cost for the option 1 (there is no transport when the water levels drop) is Rp 81,046,464,410, while the total cost for the option 2 (there are transports using existing barges when the water levels drop) is Rp 55,091,040,758.

Keywords: Simulation, siltation, barge, stockpile, fleet planning