Effects of Cutting Transport Costs by Enlarging Bulk Carriers —Promoting International Strategic Bulk Port Policies—

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1. Enlarging bulk carriers

Strong demand for resources by China and India and the expanded Panama Canal scheduled to begin service in 2014 are spurring the enlargement of bulk carriers which transport coal, iron ore, grains, etc. Many ultra large bulk carriers capable of transporting from 300,000 to 400,000 tons of iron ore or 90,000 to 120,000 tons of grain or steam coal to power thermal electric generation plants are scheduled to go into service.

Many of the facilities constructed to handle bulk cargoes in Japan's ports were constructed during the period of high speed growth so that because of shallow depth etc., their capacity is now inadequate. For example, comparisons of the allowed draught of berths for ships handling steam coal in Japan and the fully loaded draught of coal carriers (PMX: Panamax (70,000 to 80,000 tons), and NPX (New Panamax (90,000 to 120,000 tons)) are shown in Figure 1, showing clearly that the depth at these berths is insufficient. Korea and Taiwan are transporting steam coal by even larger Capesize (170,000 to 180,000 tons) ships, showing that international gaps in transport efficiency are now extremely wide.

2. Clarifying and analyzing the transport cost reduction effects

In order to quantify the cost reduction effects of using ultra large bulk carriers which will enter service in the future, a method of calculating transport costs based on ship costs, fuel costs, and port costs incurred running ships has been established. Figure 2 shows the results of the applying this method to calculate the effects of using ultra large bulk carriers to transport coal. The figure shows the results of the calculation for three cases: Case 0: ships are simply enlarged, Case 1: a new open yard is required in order to increase the quantity of cargo transported each time, and Case 2: feeder transport is necessary because the water depth in the berth in the second port is insufficient. But in all three cases, transport costs fall from the present shipping cost (PMX) as a result of the enlargement of ships (NPX/CPS: Casesize).

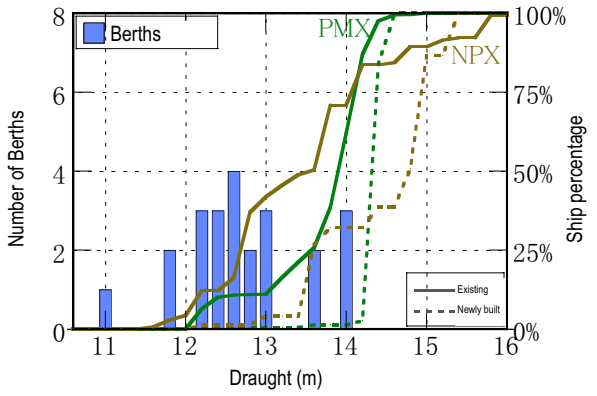

Figure 1. Draught of Steam Coal Berths in Japan and Coal Carriers

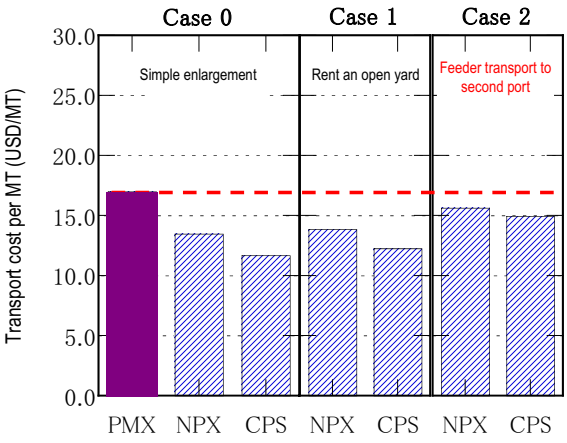

Figure 2. Example of the Results of Cost Calculation by Enlarging Coal Carriers

3. Application of results

The Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism has formed the International Strategic Bulk Port Study Committee which is conducting deliberations in order to strengthen the international competitiveness of ports which handle bulk cargoes through selection and concentration of development. The results of this research have been prepared as study documents to be

used by the committee for its deliberations.

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