

Taking the wider view

Logmarin is closely involved in the Porto Tolle project for ENEL.



how a less narrow approach can improve efficiency and cut transshipment costs

High oil prices and an expected 50% rise in total energy demand by 2030 mean that consumer nations must develop new policies. As well as promoting energy saving, and geothermic and bio fuel energy, power utilities are now switching to coal imports for coastal power stations and are developing a number of LNG (liquid natural gas) and coal terminals, to secure alternative energy sources for the future.

ENVIRONMENTAL BENEFITS OF INDONESIAN COAL FOR ENERGY SECTOR

The environmental regulations aimed at reducing SOX, NOX and CO₂ emissions are forcing power utilities to improve plant efficiency and to use 'ecological coal'. The use of the very low ash and sulphur Indonesian sub bituminous coals is a very cost-effective means of limiting emissions within the targeted parameters. The environmental benefits of some Indonesian coals resulted in an increase in demand for these coals especially by US and EU users for both blending purposes as well as for direct feed into power stations and cement factories.

The Indonesian coal industry's exports grew from 4.2mt (million tonnes) in 1990 to over 120mt in 2006. Indonesia is now challenging Australia as the world's largest exporter of thermal coal.

The increase in sea-borne coal in Indonesia is also driven by the new national policy, which seeks to promote the development of the country's low coal quality resources to meet domestic energy requirements.

According to the state-owned electric utility PT PLN (Persero), Indonesia has set out a programme to expand generation capacity. The plan, known as the 'Acceleration Program', aims to add 14,000MW of new capacity during the

next eight years, using coal with low calorific value (< 5,200 cal/gr.). The present domestic coal consumption is expected to rise from 30mt to 80mt a year in the future.

With coal seaborne trade still growing due to the domestic and export demand, port infrastructures, barges and coastal vessels for local power stations feeding and transshipment facilities for overseas shipment, are facing significant challenges to fulfil market demands.

BOTTLENECKS

The marketing efforts of the Indonesian coal industry are being hampered by the country's inadequate port facilities and logistical restrictions at the existing ports.

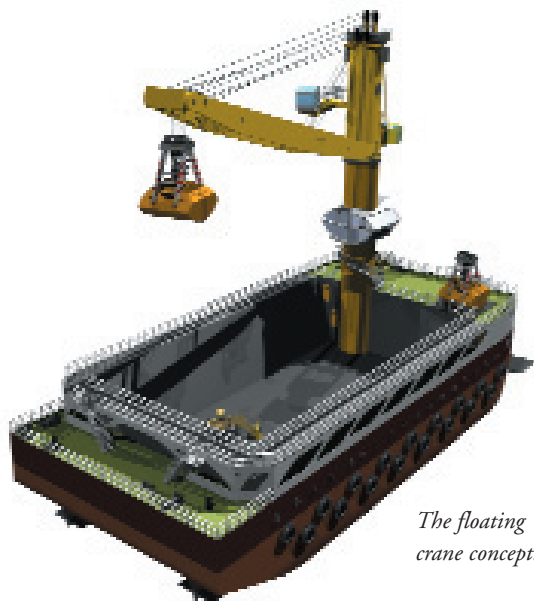
Except for the Sumatra based producer P.T. Batubara Bukit Asam, Indonesia's mines are scattered throughout East and South Kalimantan. The industry has very limited port infrastructures that can be utilized by more than one producer

It is easy to identify many areas where improvements could be made, most of the existing shore and floating loading facilities have reached their respective maximum annual capacities and the coal outflow has been also recently hampered by a shortage of barges.

Only the Tanjung Bara terminal can load Capesize vessels to their full capacity; all the other shore terminals are more or less affected by draught restrictions, preventing the maximization of vessel cargo capacity, thus resulting in dead freight charges.

The barge transport capacity utilization factor or the barge utilization efficiency is quite poor. Barge sets are being used as floating storage and are being kept pre-loaded to ensure continuous loading of oceangoing vessels.

Medium-sized and the relatively smaller shippers have been



The floating crane concept.

feeling the restrictions on their marketing activities because of the limitations and costs related to exporting in geared vessels. The high freighting cost associated with the utilization of geared vessels to destination where geared tonnage is not required results in unacceptable FOB return to those Indonesian producers.

Making better use of the existing facility, including improvements in all areas and logistics links like inner waterways and roadways access and loading infrastructures have to be pursued. However, all this is not sufficient alone to fulfil the growing demand of the market.

Prior to deciding to implement a new coal handling facility or to upgrade an existing one, it is necessary first to make a comprehensive feasibility study leading to a business plan based on a variety of considerations for the identification of commercial and operational needs, bottlenecks points and the real knowledge and appreciation of all aspects related to the coal supply chain up to the end user.

In most cases, coal exporters with their own organizations take care of the design of their coal supply chain, sometimes with the support of consulting firms.

Recently a significant number of floating cranes and other transshipping facilities have been deployed in Indonesia to support coal shipments.

As most Indonesian shippers still believe that the sea freight benefits arising from a modern and efficient transshipment method are transferred to the buyer rather than to them, the tendency is to commit to low investment i.e. normally in low daily performance/cheapest floating cranes.

What sometimes looks like the cheapest option instead works out to the contrary because it does not achieve cost-effectiveness overall in the transloading facility as in many cases the equipment proves not to be properly sized for the intended use, with a lack of reliability due to frequent breakdowns (thus generating extra unexpected costs) and loading performance unsuitable for the modern fleet of vessel to be loaded.

The Italian firm Logmarin's scope of business is to provide an integrated and comprehensive consultation and advisory service for marine terminals and associated handling infrastructures both off-shore and on-shore. This service aims at evaluating water transportation systems, identify loading, ocean/coastal and river transportation and cargo handling bottle-necks, make recommendations and identify cost benefits.

Although Logmarin started operating only in April last year, the company has already been involved in several consultations and project feasibility studies for commodities such as coal, iron

ore, LNG (liquefied natural gas), steel products, in India, Indonesia, Italy, Russia and in the Arabian Gulf, providing among other services, advisory support for ship handling, traffic management, port facility requirements, terminal downtime risks due to bad weather, ship conversions, transshipment solutions, self unloading vessels and barge design.

Logmarin relies on a team of professionals committed to provide high-quality services to clients with a blend of in-depth knowledge, experience and innovative ideas as demonstrated by two of the latest activities carried out: the new floating crane concept, and the logistics chain to feed the Enel Porto Tolle power station.

FLOATING CRANE CONCEPT

Logmarin and its associated industrial and marine engineering company Interprogetti, have jointly developed with Liebherr an innovative floating crane facility hardware for multi-purpose handling.

This is suitable for handling dry bulk commodities as well as containers and steel products. It can also be used for dredging, heavy lift and other operations. It can be operated in heavy-duty, open-water applications, and can handle vessels of up to Capesize.

It has been developed for both harbour and open water operations, and is equipped with 'roll damping systems' to offset pontoon roll and pitching motions.

PORTO TOLLE PROJECT

Rina Group and Logmarin have been closely involved in support activities to ENEL, one of the largest power producers in Europe, for its Porto Tolle project, starting from the project environmental impact assessment, addressing environmental issues and safety requirements concerning the transshipment and transportation of the coal to the power station.

The facility, as envisaged by Logmarin, will serve the power station smoothly and continuously consist of a floating terminal and river and seagoing bulk carriers.

The floating terminal will be either a second-hand recently built vessel or a new build, duly converted with side-mounted grab cranes, hoppers and conveyor belts as will be necessary to carry out transshipment operations.

A minimum of 100,000 tonnes intermediate floating buffer storage, will smooth out any discontinuity between maritime and river transport thus reducing the turnaround time of the ocean going vessels significantly and freight costs consequently.

CONCLUSION

Too many shippers are still far from taking a global view of the coal supply chain and simply focus on every single segment of the chain, one by one. They are limiting their horizons to the transshipment offshore site, with the sole aim of obtaining the lowest possible price from each supplier up to the coal FOB price. This approach, most of the time, leads to inefficiencies and results in unexpected and unnecessary extra costs/smaller earnings for the shipper.

Deficiencies will automatically affect the entire supply chain.

Part of the LogMarIn's role is to make our customer more aware of the advantages arising from a global view of the supply chain. Creativity and innovation are necessary just as much as experience to ensure sound results suiting the specific client's situation. After identification of bottlenecks and real knowledge and appreciation of all aspects are to be put to work to develop the 'perfect terminal'.

