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## The Need to Factor Asset Risk Into LNG Terminal Agreement Negotiations

Pedram Fanailoo, Det Norske Veritas (USA) and Steven Sparling, Sutherland, Asbill & Brennan

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### Abstract

As developers race around the globe building liquefied natural gas (“LNG”) terminals, companies acquiring capacity at those terminals are analyzing their reliability and operability and how to manage the risks associated with synchronizing shipping schedules with terminal access rights and downstream sales commitments. This paper describes a risk-based, analytical approach that has been applied to achieve this in several North American LNG terminals. This analysis is particularly keen at terminals where there are multiple shippers.

Utilizing Monte Carlo simulation techniques, the approach incorporates terminal-specific reliability and operational factors, including contractual, regulatory and waterway constraints, to predict LNG terminal performance in terms of operability. “Operability” is a term that describes how efficient a terminal is at transferring LNG from the tankers through the terminal. Specifically, the analysis evaluates a terminal’s ability to meet contractual supply agreements given constraints such as:

- Customer demands,
- LNG inventory capacity designated to each shipper,
- LNG vessel delivery schedules,
- LNG vessel sizes,
- Number of berths,
- Marine operating hours, and
- Terminal capacity.

The analysis quantifies the impact on performance of factors such as vessel delays due to transport issues en route, berthing delays due to adverse conditions at the destination port, equipment reliability that limits terminal throughput, constraints in storage capacity, inventory management to prevent bottom-outs and top-outs of tanks, effects of gas cavern storage and “peaking” operations to compensate for

prior shortfalls. Armed with these quantitative insights, marketing teams can then identify “deal breaker” issues and craft strategies for negotiating LNG sales and purchase agreements and LNG terminal use agreements while minimizing demurrage.

Of particular value to marketing and shipping operations teams, this paper will further explain how, at multi-shipper terminals, the ability to compare terminal performance envelopes for a virtual single-shipper terminal with a balkanized, multi-shipper terminal quantifies the value of vessel scheduling and other operational coordination among the shippers. This analysis will help to ensure that terminals do not enter into commercial agreements beyond the capabilities of the terminal and hence incur heavy penalties for shortfalls in performance.

### Negotiating Access Rights

The recent urgency for multi-user coordination at a regasification terminal reflects the commercial and regulatory imperatives in the modern LNG markets.

While historically the LNG industry was structured as a long-term, point-to-point system with surplus, dedicated shipping and ample LNG storage capacity, today's global industry, notably in the Atlantic basin, is characterized by multiple supply sources, leaner shipping pools, destination flexibility and multiple users sharing capacity at LNG receiving terminals.

The current markets pose challenges for terminal users as they seek to synchronize contractual commitments with operational realities to meet commercial objectives and efficient terminal utilization. The most significant issues at LNG terminals with multiple users are the allocation of unloading windows among users, including the initial assignments and subsequent modifications; sharing of storage capacity and send-out rights; borrowing and lending of LNG molecules; and gas quality coordination.

Each terminal presents unique circumstances, both operationally and contractually. Identifying these unique factors and solving them enables the users to have confidence in baseload sales commitments. Failure to tackle these issues could strand capacity and may render the large terminal investment uneconomic.