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Designing commercial agreements using simulation modeling for H-Gas

H-Gas is setting up a LNG regasification terminal at the west coast of Maharashtra, India. The LNG terminal will operate on a tolling basis whereby terminal users (end users / gas marketing companies) will reserve tolling capacity to unload, store and regasify the LNG sourced from international markets. The tolling model of H-Gas is quite unique and the client wanted to simulate the commercial operations of the LNG terminal to understand the implications of various parameters on the terminal owner and customers.

Based on many years of experience in the oil and gas industry Systems Navigator was selected to support H-Gas in drafting the commercial agreements and in assisting in negotiating the contracts with terminal customers by using simulation modelling techniques. To answer questions from the project team a simulation model was created to analyze (future) terminal performance based on various parameter settings. The parameters used in the simulation study included different inventory management policies (such as lending and borrowing), annual delivery plan's, arrival windows, customer profiles, fleet mixes, spot cargos, weather influences, safety stock levels and terminal infrastructure layouts.

Systems Navigator has created various scenarios tested in the simulation study to understand the sensitivity of important parameters and its impact on terminal operations. The simulation model developed for H-Gas is quite exhaustive and intricate as H-Gas wanted to check the feasibility of several options with respect to commercial agreements.

As a result of the project Systems Navigator advised H-Gas on the impact of commercial agreements on performance indicators as tank sizing, realized gas send out, waiting times and berth occupancy. By doing so the project team was able to choose the right commercial agreement for the terminal in combination with the selected terminal layout, improving terminal performance and profitability.

About Systems Navigator

Systems Navigator is an independent consultancy company based in Delft, The Netherlands. Systems Navigator specializes in the design and creation of decision support solutions based on Operations Research technology. Our specific expertise is in using a combination of discrete event simulation and optimization for decision support models that can predict system performance, as well as can be used for operational decision making by means of planning and/or scheduling. Systems Navigator successfully delivered over 50 projects for many storage terminal companies over the world.

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