ABSTRACT

In the Presidential Regulation No.05/2006 which aims to support the National Energy Policy initiated the use of the optimal mix of energy supply in 2025, with a composition of >30% for the use of natural gas. To support the National Energy Policy, it must be supported with natural gas carrier and supporting facilities like producing facility, processing facility, storing facility, and transporting facility to consumers. In terms of investment costs and flexibility, natural gas delivery through water transportation in the form of LNG has a better value economically than through a pipe or ground transportation. There are some characteristics in the transport of LNG, which is the use of special LNG vessels to minimize boiloff, a huge cost to provide the vessel in the form of investment or lease, the operational uncertainties, and limits to geographical conditions. Here we develop a model of the operational plan of natural gas distribution through water transportation taking into account the characteristics of the LNG transport and the ship docking. The objective of this model is to define the concept of strategic decisions related to operational plans and to test this concept in a case study. The problem is formulated with a simulation model. The results of the testing in the case study shows that the model is able to solve the problems of transporting natural gas through water transportation to get strategic decisions such as vessel size and the size of the tank with conducting the performance evaluation in a shortage, utility boats, frequency of delivery, and the size of the tank.