Design Analysis of the LNG Supply Chain Using CODASID Method, Case Study: The Development of Mini LNG Plant and LNG Supply from East Java to Lampung

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Abstract
One source of gas reserves in East Java is located in MBH and MDA field at Block of Madura Strait with Husky Oil operator. MBA and MDA field in Madura Offshore produced 120 MMSCFD gas. PT. PGN received 20 MMSCFD gas by Husky Oil at 2011. Gas reserves are distributed towards any selected location in East Java. It is converted into liquid (Liquified Natural Gas) with a mini LNG Plant. Furthermore, LNG is transported to the FSRU (Floating Storage Regasification Unit) Lampung. In this research, selection of location and technology for mini LNG Plant using CODASID (COncordance and Discordance Analysis by Similarity to Ideal Designs) method. This method is based on the analysis of the possibility of alternative solutions in comparison to the ideal solution with concordance and discordance. The result of calculation with CODASID showed Tanjung Jangkar as the best location to build mini LNG Plant, while Cluster LNG as the best technology. Thereafter, the analysis continued with designing transportation system of LNG supply chain from East Java to Lampung. In designing a supply chain is searched for the most optimal scenario to get the value of minimum capital cost. By analysis of the supply chain design, the most optimal capital cost is US$
107,340,000. So, economic feasibility to sell LNG is selling price margin 3.50-4.00 US$/mmbtu for payback period 8-9 years.

Keywords: CODASID, Location of Mini LNG Plant, Technology of Mini LNG Plant, LNG Supply Chain, Capital Cost