

Optimal Design and Cost Optimization of LNG Plant

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Natural gas emits little amount of pollutant when it burns and is buried around the world widely. Because of these properties, NG is receiving attention as low-carbon, eco-friendly alternative fuels. But most of NG reserves are far from the market physically and Natural gases have very large gas-to-liquid volume ratio. The liquefaction process that reduces volume of natural gases is essential for effective storage and transport. Through the liquefaction process, natural gas becomes liquefied natural gas (LNG). There are several kinds of natural gas liquefaction process. Among the liquefaction processes, propane pre-cooled mixed refrigerant (C3MR) process is the most widely used natural gas liquefaction process to date. In this study, a steady-state simulation of the C3MR process was performed using ASPEN HYSYS™. And it was optimized to reduce cost of the process. Optimization formulation is developed to minimize the sum of operating cost and capital cost of the process.

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