

천연가스(Natural Gas) 액화플랜트(Liquefaction Plant)의 에너지효율 향상에 관한 연구

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This paper focuses on the efficiency comparison of various LNG liquefaction processes and suggests a better process which requires less power and handles larger MTPA using simulation and optimization techniques. Our team analyzed steady-state processes such as Single-Mixed Refrigerant processes and Cascade Single-Mixed Refrigerant processes case by case. Recent studies forecast the market demand of the global LNG will increase approximately 10% in next 10 years. And the global LNG plant market will increase as LNG consumption increases.

Major simulation variables in SMR refrigerant systems are the selection of equipment and compositions of feed gases. Another important variable is the compressor ratio changed for decreasing required power at the same capacity. Many other variables are considered to decrease the power consumption. The cascade SMR processes are also analyzed. The capacity of LNG production increases with low power consumption.

This research was supported by a grant from the GAS Plant R&D Center funded by the Ministry of Land, Transportation and Maritime Affairs (MLTM) of the Korean government.