Optimization and Comparitive Study of Ethane Recovery Processes

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As natural gas is one of clean fossil fuels, the production and consumption is increase throughout the world. Natural gas becomes an important fuel especially in transportation and electricity generation.

There are many technologies available to recovering ethane from natural gas. Each technology has its own criteria and advantages. Gas Subcooled Process (GSP) has been state of art in recovering NGL from natural gas. Then several processes developed to improve efficiency and better CO2 tolerance. Among several ethane recovery processes have being developed, there are two processes technologies which are Warm Residue Reflux (WRR) and Cold Residue Reflux (CRR).

In this research it is intended to optimize all the three ethane recovery processes and based on the different quality of natural gas and it will be simulate under GSP, CRR and WRR processes in Hysys simulator. A set of comparative criteria have been determined to be implemented to all three ethane recovery process. The criteria are process efficiency and capital cost comparison. There also addition to find out the best technology, the recovery percentage should be economically validated against the cost incensement.