Design of synthesis natural gas(SNG) process for coke oven gas(COG) utilization

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Synthetic Natural Gas(SNG) process is one of the gasification processes considered to environment friendly and efficient technology. And Coke Oven Gas(COG) is by-product from steel-making process in coke oven. COG is H2-rich gas which is potential energy source for generation, synthesis and so on. In spite of potential, much of COG is not used properly.

So, in this study, concept of integration of SNG process and COG is proposed for utilization of COG, makes COG more valuable. Three cases are proposed for utilizing COG in SNG process properly These cases include general SNG process, SNG process using co-feed(coal, COG), SNG process using COG. And Co-feed process is divided by two alternatives have different separation position. Comparison is made with SNG processes by using energy analysis and techno-economic analysis.