

Perancangan dan estimasi biaya unit pemisahan gas asam dengan kandungan CO₂ dan H₂S tinggi

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Abstrak

Gas asam berupa CO₂ dan H₂S dalam gas alam merupakan zat pengotor yang harus dipisahkan hingga spesifikasi tertentu sebelum masuk ke pipa transmisi. Teknologi Amine Guard FS mampu memisahkan gas alam pada laju alir 165 MMSCFD dengan kandungan CO₂ 33% mol dan H₂S 12000 ppm hingga kandungan pada produk 0.67% mol CO₂ dan 3.6 ppm H₂S. Produk sweet gas yang dihasilkan sebanyak 93.12 MMSCFD dengan kandungan air 5.3lbmole/MMscf. Estimasi total Capital Expenditure (CAPEX) hampir mencapai Rp562 milyar dan total Operating Expenditure (OPEX) sebesar Rp351 milyar per tahun.

.....Acid gas contains significant amounts of CO₂ and H₂S in natural gas is usually considered as a contaminant that must be separated to a certain specification before entering into transmission pipeline. Amine Guard FS technology is able to separate natural gas at the flow rate of 165 MMSCFD with a content of 33% mole CO₂ and 12000 ppm H₂S up to 0.67% mole CO₂ and 3.6 ppm H₂S at the product. Sweet gas product reached at 93.12 MMSCFD with 5.3lbmole/MMscf water content. The total estimation of Capital Expenditure (CAPEX) amounted to Rp562 billion and Operating Expenditure (OPEX) around Rp351 billion per year.