

## Pengembangan formula harga gas bumi untuk kilang LPG high recovery berbasis komposisi gas = Development of natural gas price formula for high recovery LPG refinery based on gas composition

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### Abstrak

Dalam penelitian ini akan dilakukan pengembangan formula perhitungan harga Gas Bumi melalui pipa gas yang digunakan sebagai umpan pada Kilang LPG High Recovery. Penentuan harga gas bumi untuk kilang LPG di Indonesia saat ini menggunakan basis energi yang terkandung dalam gas bumi dan belum memasukkan faktor komposisi gas. Prinsip keadilan dianggap telah tercapai dengan keseragaman harga gas bumi padahal dalam prakteknya perhitungan berdasarkan komposisi LPG yang ada pada gas bumi bisa mendapatkan keuntungan baik bagi produsen maupun offtaker gas.

Metode yang digunakan adalah dengan menghitung harga gas dari sisi produsen sebagai willingness to sell WTS dan harga gas dari sisi offtaker gas sebagai willingness to pay WTP. Titik temu harga gas dibuat dalam suatu formula yang dikembangkan terindeks pada harga LPG Aramco dan Minyak Mentah Indonesia ICP. Usulan harga gas baru dilakukan dengan mengembangkan formula harga awal gas =  $A 0.5 P - P1 - C - C1$  menjadi harga gas =  $a \times A \times b \times c \times C$  dimana : A = Harga dasar gas Base Price , B = Harga LPG Aramco dikurangi Cost Processing LPG Biaya Capex, Opex, depresiasi , C = Harga kondensat mengacu pada 75 harga minyak mentah Indonesia, a = fraksi komponen C1 dan C2 dalam persen, b = fraksi komponen C3 dan C4 dalam persen, c = fraksi kondensat dalam persen, a b c = 100. Dari hasil perhitungan sensitivitas didapat kenaikan harga gas linear terhadap kenaikan harga LPG Aramco sehingga lebih menguntungkan baik bagi produsen maupun offtaker gas.

.....In this research, we will develop the formula for calculating the price of Natural Gas through gas pipeline which is used as feed for LPG High Recovery Plant. The determination of natural gas price for LPG refinery in Indonesia currently uses the energy base contained in natural gas and has not yet entered the gas composition factor. The principle of justice is considered to have been achieved with the uniformity of natural gas prices whereas in practice the calculations based on the existing LPG composition on natural gas can benefit both the producers and offtakers of gas.

The method used is to calculate the gas price from the producer side as willingness to sell WTS and gas price from the side offtaker gas as willingness to pay WTP. The gas price meeting point is made in a formulation developed indexed on LPG Aramco and Indonesian Crude Prices ICP.

The proposed new gas price is made by developing the preliminary gas pricing formula  $A 0.5 P - P1 - C - C1$  into the gas price  $a \times A \times b \times c \times C$  where A Gas base price, B Aramco LPG Price minus Cost Processing LPG Cost of Capex, Opex, depreciation , C Condensate price refers to 75 of Indonesia crude oil price. a fraction of components C1 and C2 in percent, b fraction of C3 and C4 components in percent, c fraction of condensate in percent, a b c 100 . From the calculation of sensitivity, gas prices rose linearly to Aramco LPG price increase so it is more profitable for both the producers and the gas offtaker.