

ABSTRACT

PRADESIGN OF POTASSIUM CARBONATE PLANT FROM POTASSIUM HYDROXIDE AND CARBONDIOXIDE GAS CAPACITY 30.000 TONS/YEAR (Absorber Column Design (RE-201))

**By
NOVIANTI DIAH ANGGRAENI**

Potassium carbonate plant produced by reacting potassium hydroxide and carbondioxide, is planned to be located in Sumuradem village, Indramayu, West Java Province. The plant is established by considering availability of raw materials, transportation facilities, readily available labor and environmental conditions.

This Plant is planned to production potassium carbonat powder with production capacity is 30.000 tons/year, with operating time of 24 hours/day and 330 working days in a year. The raw materials used in this plant are much 3.089,407 kg/hours of *Potassium Hydroxide* and *Carbondioxide* gas as 3.761,874 kg/hr.

Provision of utility plant needs a treatment system and water supply, steam supply systems, instrument air supply systems, and carbondioxide gas supply system.

Labor needed in this plant as many as 171 people with a business entity form Limited Liability Company (PT) with line and staff organizational structure.

From the economic analysis is obtained :

<i>Fixed Capital Investment</i> (FCI)	= Rp. 167.358.291.243
<i>Working Capital Investment</i> (WCI)	= Rp. 29.533.816.102,-
<i>Total Capital Investment</i> (TCI)	= Rp. 196.892.107.344,-
<i>Break Even Point</i> (BEP)	= 53%
<i>Shut Down Point</i> (SDP)	= 23%
<i>Pay Out Time after Taxes</i> (POT) _a	= 3,03 tahun
<i>Return on Investment after Taxes</i> (ROI) _a	= 19,58%
<i>Interest Rate Return</i> (IRR)	= 17%
<i>Annual Net Profit</i> (Pa)	= Rp. 38.551.360.773,-/tahun

By considering above the summary, it is proper establishment of potassium carbonate plant for studied further, because the plant is profitable and has good prospects future.