

## ABSTRACT

EKASWARA RAMADHI. *The Study of Feasibility Investment of DRI Hyl I Replacement Case Study of PT Krakatau Steel* (under the supervision of Erman Munzir).

This study is aimed to make the feasibility of the DRI Hyl I replacement investment by the new technology, since the old plant is fully operated, inefficient and has low productivity. This investment needed to make Sponge Iron supply available when the shutdown process done, to reduce cost of production and increase the competitive advantage in the down stream plant in the domestic and export market. The study of the investment conducting financial forecast to calculate the reduction of cost production of Sponge Iron per ton compared by the current conditions, that consists of Profit/(Loss) forecast, Cash Flow forecast, and Balance Sheet forecast to make the Free Cash Flow from the investment to calculate Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period. The decision is also considered by using the sensitivity analysis of the dominant factors, which will impact to the investment feasibility. The calculation of the study using the assumptions shows that feasibility replacement DRI Hyl I accepted by IRR 14.41% higher than the discount rate 9%. Net Present Value of the project given positive is +\$112.659.437,78 that the project accepted. Payback Period given that the project will return on 6.04 years from starting point which is lower than the economics value. The production cost of Sponge Iron when the plant operated on full capacity is \$108.70 lower than average current condition 1998-2000 (\$151.24; \$134.60; \$127.59) is \$137.81, that the significant reduction to make the competitive advantage available. Sensitivity analysis on gas price used \$2.00/MMBTU shows that the investment still accepted, since the IRR is 13.00%, NPV is +\$81,287,949.08, and Payback Period is 6.71 years. Sensitivity analysis on optimistic sales price, shows that the investment still accepted, since the IRR is 18.27%, NPV is +\$210,687,257.68) and Payback Period is 5.00 years. Sensitivity analysis on pesimistic sales price, shows that the investment still accepted, since the IRR is 9.79%, NPV is +\$14,631,617.89) and Payback Period is 8.50 years. Sensitivity analysis on sales price lower by 11.6% from the base case, shows that the investment should be rejected that the IRR is 8.94%, NPV (\$1,052,833.30) and Payback Period is 9.08 years. Sensitivity analysis on Pellet price by increasing 20.8% shows that the investment should be rejected, the IRR is 8.99%, NPV is (\$245,302.07), and Payback Period is 9.06 years. The sensitivity analysis above shows that the Replacement of DRI Hyl I investment is very sensitive from the sales price fluctuation.