

Shotika Dit-amnat 2009: The Cost - Benefit Analysis of the New Activated Sludge Wastewater Treatment System Project. Master of Economics, Major Field: Economics, Department of Economics. Thesis Advisor: Ms. Wallapak Polasub, Ph.D. 87 pages.

The objectives of this research is to study the financial and economic costs and benefits of the activated sludge wastewater treatment system project, the feasibility of the project as well as the reduction of expenditure by comparing costs and benefits between the general activated sludge and new activated sludge systems. The study is analyzed in three cases: (1) the case of general activated sludge wastewater treatment system, (2) the case of the new activated sludge wastewater treatment system (new construction), and (3) the case of the new activated sludge wastewater treatment system (adding additional equipment to the old system). The criteria for the decision making are the net present value, the benefit-cost ratio and the internal rate of return. The 7 percent discount rate is chosen while the given project life is 30 years.

The results of the study show that the wastewater treatment systems in all three cases are neither feasible in the financial nor economics terms. However, the case of the new activated sludge wastewater treatment system (new construction) gives the least financial and economic losses. Despise the losses, manufacturers need to operate under the federal water pollution regulations and standards. Therefore, the wastewater treatment system is necessary. The analysis on the cost reduction shows that the case of the new activated sludge wastewater treatment system (new construction) has the highest magnitude. The financial expenditure reduction is 300.86 million baht while the economic expenditure reduction is 276.79 million baht. The case of the new activated sludge wastewater treatment system (adding additional equipment to the ole system) has the financial and economic expenditure reduction of 250.44 million baht and 230.40 million baht, respectively.

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