

ABSTRACT

Title : Cost Effectiveness of Integrated Solid Waste Sorting Plant,
Suranaree University of Technology

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This research studied about Cost Effectiveness of Integrated Solid waste Sorting Plant, Suranaree University of Technology. The objectives of research were 1) analyze cost and benefit of Integrated Solid waste Sorting Plant 2) assess the ability of Integrated Solid waste Sorting Plant in the future 3) assess cost effectiveness and 4) analyze sensibility of Integrated Solid waste Sorting Plant in case, cost and return are unusual or unstable.

We needs to consider several things include : the quantity of solid waste generation, waste composition, waste possessing and benefit of Integrated Solid waste Sorting Plant. The period of studies was occurred during 2013, December to 2016, July (32 months) according to bring the data to analyze cost-benefit, sensibility and cost effectiveness of environment and society.

The result indicates that investment in Integrated Solid waste Sorting Plant project is worth investment. The result from cost- benefit analysis has Net Present Value (NPV) about 2,555,585 TH baht, Benefit-Cost Ratio (B/C Ratio) is 0.92, Internal Rate of Return (IRR) is around 15.47% and Payback period (PB) is around 13.79 years.

The result of sensibility analysis in case of unusual benefit indicates that if we pay more cost about 10% and decrease benefit about 8% and 10% an investment won't be worth investment; on the other hand, if we change the plan by increasing income from eliminating solid waste for outside during the solid waste in university is less than capacity of plant, it will be worth investment.

The result of ability of Integrated Solid waste Sorting Plant assessment in the future shows that, in 2027 Annual will have solid waste to full capacity of plant about 10 tons per day.

The result of value environment assessment indicates that it can reduce greenhouse gas emission about 16,033 tCO₂e or 5.93 tCO₂e per total of solid waste. Moreover, Income assessment from selling carbon credit is about 489,912 TH baht or 181.23 TH baht per total of solid waste. The result of value society assessment, Integrated Solid waste Sorting Plant, Suranaree University of Technology can present an environmentally responsible public image. Furthermore, it can use for education and dissemination knowledge to the community.