

Chatchai Tangtanang 2014: Project Feasibility Study of Capacity Expansion for Automotive Stamping Parts Plant. Master of Engineering (Engineering Management), Major Field: Engineering Management, Faculty of Engineering at Si Racha. Thesis Advisor: Assistant Professor Sirang Klankamsorn, Ph.D. 218 pages.

This research proposes the project feasibility study of production line's capacity expansion for 23 part types in Thailand in 4 aspects, which are 1) Marketing study. 2) Engineering study 3) Financial study and 4) Environmental study. The capacity expansion to meet the customer demands were investigated in 3 alternatives 1) installation the new production line in the existing plant 2) refurbishment the equipment in the existing production line and 3) installation the new production line in the new plant. Finally sensitivity analysis on the feasible alternative in financial study in 3 cases, 1) raw material cost increase 10% 2) Demands decrease 10% and 3) raw material cost increase 10% and demand decrease 10%.

The results from the forecasting techniques found that the average demand is approximately 72,230 units per year. The alternative of installation the new production line in the existing plant is found to be an efficient alternative for both of engineering study and financial study. The carbon emission is 6.88 kg CO₂ eq. whereas the financial analysis, the net present value is 627,909,799 baht, the internal rate of return is 40% and the discount payback period is 3.3 year. Sensitivity analysis on the first alternative found that there are no affected on raw material cost increase and decrease in demands.

Keywords: Project feasibility, forecasting techniques, carbon emission, financial analysis

Student's Signature

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