

A Study of Green Factory Practices in Malaysia Manufacturing Industry

Md Fauzi Ahmad ¹, Siti Norziah Ismail ², Mohd Fahrul Hassan ³
 Chan Shiau Wei ⁴, Norhadilah Abdul ⁵, Ahmad Nur Aizat Ahmad ⁶
 Mohd Nasrun Mohd Nawi ⁷, Nor Aida Abdul Rahman ⁸

^{#1,2,4,5,6}*Faculty of Technology Management,
 Universiti Tun Hussein Onn Malaysia (UTHM), Parit Raja,
 Batu Pahat, Johor, Malaysia,*

¹mohdfauzi@uthm.edu.my

²norziah@uthm.edu.my

⁴swchan@uthm.edu.my

⁵hadilah@uthm.edu.my

⁶aizat@uthm.edu.my

^{#3}*Faculty of Mechanical Engineering,
 University Tun Hussein Onn Malaysia (UTHM), Parit Raja,*

³fahrul@uthm.edu.my

^{#7}*School of Technology Management and Logistic,
 College of Business, Universiti Utara Malaysia, Malaysia*

⁷nasrun@uum.edu.my

^{#8}*Aviation Management Department, Universiti Kuala Lumpur*

⁸noraida@unikl.edu.my

a)Corresponding author: mohdfauzi@uthm.edu.my

Abstract— Green Factory is a management tool for eliminate environment burden such as waste, chemical and pollution. Economic development grew too fast has effected major impact to environment. Carbon dioxide, loss of biodiversity, degradation of natural resources, global warming, ozone layer depletion and deforestation have effected on the environment. Based on world statistics, Malaysia has produced 29 million tonnes carbon dioxide and ranked 26th (0.66%) of the 215 countries in the world. 110 world leaders including Malaysia has agreed to work for reducing carbon dioxide gas in the Copenhagen Climate Change Summit 2009. Five main criteria for Green Factory have been identified; (1) Solar power generation systems, (2) Fuel cells system, (3) Cogeneration systems, (4) Air conditioning units and (5) Recycling system. A study was conducted to manufacturing companies that adopted Green Factory practices to assess its their green practices for minimizing environmental problems. The samples were 300 companies in Malaysia. Finally, 20% response rate has been received, with 60 respondents. Based on descriptive result, recycling shows the highest level of practices, followed by solar power cogenerations system, air conditioning units and fuel cells system. This study result shows Green Factory has significant relationship with environment

performance ($r=0.684$, $P<0.05$) and business performance ($r=0.510$, $P<0.05$). Overall, the survey result shows green factory practices has significant impact on Malaysia manufacturing companies. In conclusion, Green Factory can be used as effective tool for improving not only for environment performance but also for business performance.

Keywords— Total Quality Management, Green Factory and Malaysia Manufacturing Companies.

1. Introduction

Environment issues is a challenging to the world society in recent years as a result of many pollutions and unstable climate occurred. Environmental awareness amongst world society are growing in importance for them to live healthier, greener and more environmentally friendly in standard of living. Green Factory is an effort to control and reduce the environmental impact in the manufacturing sector. Based on [1], control is very important to reduce waste of resources and curb unnecessary spending at every stage of operations. In particular, each plant should develop a plan and strategy to reduce the environmental impact in their production activities such as reducing carbon dioxide (CO₂), waste