

**FACTORS INFLUENCING THE APPLICATION OF GREEN
TECHNOLOGY FINANCING SCHEME (GTFS) AND BUSINESS
PERFORMANCE IN SELECTED GREEN INDUSTRY.**

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TECHNOLOGY FINANCING SCHEME (GTFS) AND BUSINESS
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**This is submitted in partial fulfillment of the requirements for the award of
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DECLARATION

“I admit that this report is the result of my own, except certain explanations and passages where every of it is cited with source clearly.”

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DEDICATION

I would like to dedicate the appreciation to my family members who supported me from spiritually and financially, beloved supervisor and panel who guided me throughout the research, housemates and course mate that assisted me through the journey of research.

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ABSTRACT

Green technology is identified as a new field that has grown quickly in this era as most of the people start aware of this technology which becomes the determinant on environmental issues. Green technology deals with using science and technology in order to protect environment. The main goal of green technology is to conserve nature and remedy the negative impacts that humans have on it. There are a lot of studies discussing green technology and only few studies are available in Malaysia. In this research, it aims on understanding green technology in Malaysia and a financial incentive that was launched by government that is Green Technology Financing Scheme (GTFS). The whole research focused on investigating the factors that influence the application of GTFS in green industries, the usage of GTFS in green industries and how GTFS affects company's business performance. This research involved two green companies which are the recipients of GTFS in Negeri Sembilan, and Johor. There are limited recipients in each state, thus, researcher tried to collect data according to their locations. This research is a qualitative research that used semi-structured interview and case study strategy by using cross-sectional time horizon. The finding showed the main reasons that they applied for GTFS due to financial factors as GTFS paid for the 2% of interest from the loan they borrowed from financial institutions. Apart from that, GTFS also used to improve their system and it gave impacts on increasing their profitability. Researcher proposed that GTFS should be continue to provide funds to local green industries and hopefully this research might become references to future research.

Keywords: GTFS, application, business performance, green industry.

ABSTRAK

Teknologi hijau dikenalpasti sebagai bidang baru yang telah berkembang pesat dalam era ini kerana kebanyakan orang mula menyedari teknologi ini yang menjadi penentu mengenai isu-isu alam sekitar. Teknologi hijau diperkata menggunakan sains dan teknologi untuk melindungi alam sekitar. Matlamat utama teknologi hijau adalah untuk memulihara alam semula jadi dan memperbaiki kesan negatif kepada manusia. Terdapat banyak kajian membincangkan teknologi hijau dan hanya sedikit kajian yang boleh menjadi rujukan di Malaysia. Kajian ini bertujuan untuk memahami teknologi hijau di Malaysia dan insentif kewangan yang dilancarkan oleh kerajaan iaitu Green Technology Financing Scheme (GTFS). Seluruh penyelidikan memberi fokus kepada penyiasatan faktor-faktor yang mempengaruhi penggunaan GTFS dalam industri hijau, penggunaan GTFS dalam industri hijau dan bagaimana GTFS mempengaruhi prestasi perniagaan syarikat. Penyelidikan ini melibatkan dua syarikat hijau yang merupakan penerima GTFS di Negeri Sembilan, dan Johor. Terdapat penerima yang terhad di setiap negeri, oleh itu, penyelidik cuba mengumpulkan data mengikut lokasi mereka. Kajian ini merupakan kajian kualitatif yang menggunakan strategi wawancara separa berstruktur dan kajian kes dengan menggunakan horizon rentas masa. Dapatan ari sesi wawancara antara penyelidik dan responden, sebab mereka memohon GTFS adalah kerana factor kewangan iaitu GTFS membayar 2% faedah daripada pinjaman yang mereka perolehi dari institusi kewangan. Selain itu, GTFS digunakan untuk memperbaiki system mereka dan ianya memberi kesan kepada peningkatan keuntungan mereka. Penyelidik mencadangkan supaya GTFS dapat terus menyediakan dana kepada industri hijau tempatan dan diharapkan kajian ini mungkin menjadi rujukan kepada penyelidikan masa depan.

Keywords: *GTFS, aplikasi, prestasi perniagaan, industry hijau.*

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LIST OF ABBREVIATIONS

GTFS	Green Technology Financing Scheme	1
ITA	Investment Tax Allowance	1
GITA	Green Investment Tax Allowance	1
PFI	Private Finance Initiative	1
UTAR	University Tunku Abdul Rahman	2
UNFCC	United Nations Framework Convention on Climate Change	2
EPA	Environmental Protection Agency	3
UOB	United Overseas Bank	3
OCBC	Oversea-Chinese Banking Corporation	3
IT	Information Technology	8
ICT	Information and Communication Technology	9
IPCC	Intergovernmental Panel on Climate Change	10
CO₂	Carbon dioxide	10
RM	Ringgit Malaysia	14
GHGs	Greenhouse Gases	16
R&D	Research and Development	16
UK	United Kingdom	17
US	United State	17
GREET	Grant for Energy Efficient Technologies	17
EASe	Energy Efficiency Improvement Assistance Scheme	17
ADAS	Accelerated Depreciation Allowance	17
NBS	Network for Business Sustainability	17

LIST OF ABBREVIATIONS

PV	Photovoltaics	20
SME	Small Medium Enterprise	25
CSP	Corporate Social Performance	26
CSR	Corporate Social Responsibility	26
Sdn Bhd	Sendirian Berhad	34
PSM	Projek Sarjana Muda	36
SPSS	Statistical Package for the Social Sciences	43
SATS	Singapore Airport Terminal services	47
MW	Megawatt	47
IPP	Independent power producer	47
kW	Kilowatt	49
kg	Kilogram	51
CEO	Chief executive officer	52
ISO	International organization for standardization	52
TNB	Tenaga Nasional Berhad	55
USD	United States Dollar	55
MOF	Ministry of finance	59
CGC	Credit guarantee corporation Malaysia berhad	69
PFI	Participating financial institutions	69

CHAPTER 1

INTRODUCTION

1.1 Introduction

Green technology has become more concern among industry in Malaysia. Green technology can be defined as the application and development of products, systems and equipment to conserve the natural environment and resource in order to reduce the negative effect of human activities (Bhardwaj and Neelam, 2015). In order to apply this kind of technology normally industry has to spend a lot of funds on technology development or application. With the implementation of green technology, industries believe that it will make them more competitive advantage and can survive with the current competition. To encourage the implementation of green technology in Malaysia, government has introduced and give some incentive to assists industry in green technology application such as Angel Tax Incentive, Investment Tax Allowance (ITA), and Green Investment Tax Allowance (GITA) and one of the incentives given by government is Green Technology Financing Scheme (GTFS).

GTFS is a program or financial incentive which under government and founded in 2010 by giving a certain amount of fund every year. For example, there are one hundred and twenty two industries are the recipients of the fund scheme. From the website of GTFS the companies are came from different states, the requirements of getting this fund is the recipients must qualify the Private Finance Initiative (PFI) requirements and meets green technology criteria under GTFS

program. The evidence of proven technology and business model may be required to make sure the only viable projects will be funded.

1.2 Background of study

Green technology can be defined as the application and development of products, systems and equipment to conserve the natural environment and resource in order to reduce the negative effect of human activities (Bhardwaj and Neelam, 2015). As the word “green” means by, green technology is the environmentally friendly technology that involves the reuse of the waste products emitted from factory to reduce environmental pollution. According to Jainudin et.al., (2017), they stated that green technology acts as a tool to update various types of systems and materials. In order to attain to “developed country”, green technology had been identified as a crucial essential where the developers need to innovate some sources or products that provide all the kind of sources saving.

From the research done by Aithal and Aithal (2016), they stated green technology can avoided production of green gases and supported the use of natural organic resources. Whiles, green technology is an alternative way to save our earths and it uses new innovation techniques (Soni, 2015). There is uncountable alternative energy of green technology such as using the solar panels, wind power and thermal heating instead of fossil fuels. A good example implementation of green technology in automobile industry is development of the hybrid engine which can run on both gas and electricity. Nestle has collaborated with University Tunku Abdul Rahman (UTAR) in a research project to investigate the use of phytoremediation, bioremediation and granular activated carbon technologies in controlling chemical and metal concentrations in padi fields. The research studies may help to support farmers’ financial burden through the less harm of alternative natural resources instead of chemical fertilisers (Ng, 2014)

However, some companies are not able to undergo this technology because of the high capital and labour. According to policy documents from United Nations Framework Convention on Climate Change (UNFCCC) (2013), the main obstacle

faced by developing countries is the limitation of financing resource. In order to solve this issue, Green Technology Financing Scheme (GTFS) has been launched by government in year 2010. This grant offered by the government to the selected industries. According to Zaharudin and Azlan (2017), they stated that there are four sectors of company that can be qualified to receive the funds from GTFS that are: transportation, building and townships, water and waste management and energy.

Based on the GTFS website, there are some criteria that all the products, equipment and system need to fulfil that are: reduce the degradation of environment, protect the use of energy and natural resources, encourage the use of renewable energy resource and low or even zero green-house gas emission.

In order to prove that green technology has gone widely in other country, the following instances give a good impact when green technology has been launched in one of the program that is a voluntary program, that introduced by Environmental Protection Agency (EPA) in the United States of America. This program has helped organisation save a lot of cost besides reducing their emissions when they had determine products that have superior energy efficiency. The products that they identified has save 20-30% of energy that those required by federal standards (Mueller, 2017). Apart from that, from a research done by Xia., et al., (2014), they stated that the application of green technology does effects the environmental and business performance which is in positive way.

1.3 Problem Statement

It is undeniable that, green technology is less harmful compare to the existing energy and gives positive effect on business performance. However, some industries face barriers like financial, technical, regulatory/institutional and informational barriers that keep them for go green. From the research done by Irvani, Akbari and Zohoori (2017), they stated that green technology is still new and needs a huge amount of cost to improved and train it. From the publication of GTFS, there are a few financial institution took part in this such as Maybank, UOB, Affin bank, Am

bank and OCBC bank. From Maybank2u website, they stated that the aims of GTFS is to promote green technology by giving funds and loans to industries that utilise green technology in their business.

According to Abdullah (2018), in his news article, he stated that as for last year, to support 319 green projects throughout the nation, RM 3.5 billion funding has been approved by finance institutions, for this year the total amount is RM 5 billion that allocated under the GTFS. Whiles, from the articles in The Star written by Dhesi (2016), he mentioned that GTFS has been influential in growing green business and technology sector in Malaysia. It has helped a lot of green industries gain access to finance their green ventures. Thus, GTFS has shown a big impact on business performance of green industries.

From Green Bank Network which aims on get more and more fund and investments into clean energy, GTFS has extended from 2015 to 2022 and this can be seen that government has try hardly to commit and persuade the development of green technology sector for the nation's socio-economic growth. The loan guarantee offers 60% from government for the green cost and a rebate of 2% per year on interest charged by financial institutions. There are few importance of GTFS to green industries are that, they provide suitable funds, basic knowledge about green technology to the industries who apply green technology in their companies. There are existing some problem occur, GTFS will not provide the funds bias to certain companies as they will keep updated the application of company until year 2017, by fulfilling some requirements, industry will be able to apply for that. Thus, the main concern of GTFS is that, researcher needs to know the reasons why they apply for GTFS and how they used it to influence their business performance.

1.4 Research Questions

The purpose of this research is to determine the relationship of GTFS, business performance and the selected industries. The research questions are as below:

- i) What are the reasons of green industry applying for Green Technology Financing Scheme (GTFS)?
- ii) How do they use the GTFS in their green industry?
- iii) How does GTFS give impact to green industry's business performance?

1.5 Research Objectives

To answer my research questions, there are some of the objectives that need to be identified, that are:

- i) To identify the reasons of green industry apply for Green Technology Financing Scheme (GTFS).
- ii) To explore the usage of GTFS in selected green industry.
- iii) To investigate the impact of GTFS on green industry's business performance.

1.6 Scope of study

This research is mainly focus on the factors that influence the application of Green Technology Financing Scheme (GTFS) and business performance in selected green industries. This incentive is a program under government and for the industries which had been selected will be given some amount of fund to undergo their business which related to green technology. The research targeted on the business performance of selected green industries before, during and after the funds had been given to them. There a few sectors that under GTFS and the funds will be given according to the sectors that the industry acquired for.

1.7 Limitation of Study

There are several limitations when accomplished this research. Firstly, this research is just focused on the GTFS and selected green industries. The limited information about GTFS and green technology also acts as a big challenge. Apart from that, the data collections are limited from the selected industries as they are big company and most of the information is confidential. Besides, there is still lacks of research and evidence on GTFS in Malaysia which GTFS is still an organisation that didn't know by some of the industries.

1.8 Summary

In this chapter, the general concept about green technology had been introduced and the organization under government that is Green Technology Financing Scheme (GTFS) also been described as general. For the next chapters, the factors that influence this organisation will be included. Whiles, this thesis will be divided into five chapters and this chapter named as introduction. In this chapter, the background of study, problem statement, research questions and objective and others will be included. For chapters two until five, will be discussed later in the following chapters.