

PROFILING THE PROMOTION OF GREEN TECHNOLOGY IN INDUSTRY THROUGH GTFS

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ABSTRACT

Malaysia has devoted itself into promoting a green economy by creating some programs that would foster the partnership of green technology and green financing. This has given birth to the Green Technology Financial Scheme, which was started in 2010 supporting companies that are advocating green technology. It covers 2 types of companies and 4 sectors of green technology that any company can choose from. Since its initiation, hundreds of companies have been recipients of the scheme. The paper studied the Green Technology Financial Scheme's overall profile, starting from the rationale of why it was formed, to the statistics of its recipients. This study is important indicator to encourage other industries to adopt green technology as their competitive advantage for extensive competition. An analysis is made as to how balanced is the distribution of financing among the sectors that has been identified.

Keywords: GTFS; green financing; green technology; green sustainability.

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1. INTRODUCTION

1.1. Towards a Green Society

Malaysia is striving to become a developed country by the year 2020. Amidst this aspiration, there is an increase in consumption of resources which leads to continuous reduction of essential non-renewable resources. The government has made efforts to promote green sustainability. One of these efforts is geared towards green economy by supporting companies that are advocates of green technology. This support by the government led to the development of green financing called Green Technology Fund Scheme (GTFS). GTFS is a soft loan supported by the government; the treatment of the loan is similar to that of normal loans, where the borrower must repay the loan to the bank throughout the tenure period [1].

The GTFS introduced by the government aims to promote green technology by availing loans / financing to companies that supply and utilize green technology. The objective of GTFS is to promote investments [1] in Green Technology which minimizes the degradation of the environment, has a zero or low greenhouse gas (GHG) emission, safe for use and promotes healthy and improved environment for all forms of life, conserves the use of energy and natural resources or promotes the use of renewable resources.

Financing to promote green technology is important because policy makers all over the globe have acknowledged that green growth can reinforce industrial policy and macroeconomic goals as growing demand for green technologies, products and services provides opportunities for countries like Malaysia to develop new industries and markets. However, the policy commitments from the government alone is not sufficient as enabling environment for green growth must also involve a long-term pledge from all stakeholders in the green growth connection [2].

The issues in financing greentechnology projects were related to the global demand, new economic growth sectors, investment focus and green technology potential in Malaysia but without denial that there is a great potential, but challenges are abound [3]. Research in China by [4] shows that Green fund play an important role in supporting the main Chinese Industrial restructuring and upgrading for the purpose of gaining new competitiveness.

1.2.Green Technology Financial Scheme: How it Started

The GTFS [1] is a special financing scheme introduced by the government to support the development of Green Technology (GT) in Malaysia. This was proposed in 2010 with a total financing amount of RM1.5 billion. During Budget 2013, YAB Dato' Seri MohdNajibTun Haji Abdul Razak announced that the fund for GTFS will be increased by RM2 billion and the application period extended for another three years which ends on 31 December 2015. Then, on Budget 2016, YAB Prime Minister once again announced the extension of the implementation period of the GTFS until 31 December 2017. These extensions reflect the government's commitment to pursuing the development of the green technology sector for the nation's socio-economic growth. The loan guarantee scheme offers a rebate of 2% per annum on interest while also providing a government guarantee of 60% for the green cost of the financed amount. The GTFS extension through 2022 included approval that an addition MYR 5 billion (USD 1.2 billion) of loans may be approved through the scheme, on top of the MYR 3.5 billion (USD 814 million) already approved.

As of 2016, GTFS has 40% bank exposure, 30 to 60% collateral and collateral nets are almost zero. It was designed for a project to generate bio-fuel or energy from sustainable sources and supply to utility company or project to provide energy efficiency performance contracting services and products or project to provide products and services to the green technology sector and companies or project to develop, supply or implement green tech products and/or services to public or private sector [3].

Green Bank Network observed that from 2010 to October 2017, the GTFS has successfully approved a total of 315 projects with a total cost of nearly USD 1.7 billion. The amount of loans that have been approved under the scheme is USD 829 million. The bulk of projects approved are in the renewable energy sector. The approved projects are anticipated to contribute to the avoidance of millions of ton of CO₂ each year and createthousands of green jobs [5]. The GTFS has been instrumental in encouraging the participation of private financial institutions to invest in green ventures, as it has brought together a total of 28 banks and financial institutions to participate in the Scheme. With increasing numbers of entrepreneurs venturing into the green technology sector, GTFS will continue to be an important enabler bridging financing gaps and empowering emerging green businesses in the country [6]. Also,

the government had in October 2012, during the 2013 Federal Budget speech, announced the inclusion of MDV into the GTFS as a Participating Financial Institution. MDV intends to leverage its strength as a seasoned technology financier to help deliver the GTFS [7].

Despite these statistics, according to [3], the total projects approved are very low and the total financing is very limited due to barriers hindering the financial model. Alternative financing routes needs to be explored to increase the involvement of green technology projects and to increase the players in green growth. As compared with Netherlands Green Funds Scheme, this is truly very low by standards. This is because for Netherlands, in fifteen years, their GFS funded six thousand projects [8].

1.3. GTFS: How it Works

The GTFS exists to help incorporating green technology elements in specific project related to the identified sectors. These projects must be located within Malaysia, utilizing local and/or imported technology. Private companies that could benefit from this financing scheme are either producers or users [1] of green technology products or systems. GTFS [9] for producer or user category is shown in Table 1.

Table 1. Types of companies qualified for funding

| Features | Producer of Green Technology | User of Green Technology |
|---|--|--|
| Financing size | Maximum: RM100 million per company (effective from 15 June 2016) | Maximum: RM10 million per company |
| Financing tenure | Up to 15 years | Up to 10 years |
| Eligibility criteria | Legally registered Malaysian -owned companies (at least 51%) in all economic sectors | Legally registered Malaysian -owned companies (at least 70%) in all economic sectors |
| Participating financial institutions (PFIs) | All commercial and Islamic banks. GFIs: Bank Pembangunan, SME bank, Agrobank, Bank Rakyat, EXIM bank and Bank Simpanan Nasional (Listing of commercial banks and Islamic banks from Bank Negara Malaysia website.) | |

This scheme is only applicable for new projects and reconstruction, renovation or expansion incorporating Green Technology concept. These projects must have not been funded and partly funded before. It definitely is not for projects that has already started or completed.

2. REVIEW ON GTFS PRACTICE IN MALAYSIA

GTFS has 624 companies accepted for financing and the paper has categorized, analyzed and reviewed according to criteria. The total fund allocated to GTFS is exactly RM 3,638,979,390.00 [9]. There are four sectors that would partake of the loan namely energy, building, transport and waste and water (Fig. 1).



Fig.1.The four sectors funded by GTFS [10]

For energy, the types considered are renewable energy such as hydro, solar, fuel cell, wind, kinetic; the use of biomass and combustible waste. The required scope is the application of green technology in power generation and in the energy supply side management, including co-generation by the industrial and commercial sectors. The general criteria [11] for the energy sector are minimize degradation of environment, zero or low greenhouse gas emission, safe for use and promotes healthy and improved environment for inhabitants, conserve the use of energy and natural resources, and promote the use of renewable energy resources [1]. This sector (Table 2) has the highest number of applications and certified companies totaled to 461 with 34 users and 427 producers.

Table 2. Number of companies in the energy sector

| | |
|--------------|-----|
| Energy (u) | 34 |
| Energy (p) | 427 |
| Total Energy | 461 |

For water and waste, companies who are developing or utilizing technology in the management and utilization of water resources and the management of liquid and solid waste [9]. This especially includes the various types of water such as fresh water (tap or portable), water for industrial processes, agriculture and grey water, and type of waste such as garden waste, industrial waste (i.e. spent bleaching earth, waste edible oil, etc.), municipal waste (MSW), agricultural waste, organic waste and sewage management. The criteria for water and waste are the following: management and utilization of water resource; better quality of water supply to user; efficient use of water resource; rainwater harvesting; recycling and reuse; reduction use of chemicals; waste water treatment, solid waste. sanitary landfill, waste recycling, waste to energy, waste to fertilizer, waste reduction and use of green materials. The water and waste sector has 126 certified companies with 10 users and 116 producers.

Table 3. Number of companies in the water and waste sector

| | |
|------------------------------|-----|
| Water and Waste (<i>u</i>) | 10 |
| Water and Waste(<i>p</i>) | 116 |
| Total Water and Waste | 126 |

Within the building and township sector, adoption of green technology in the construction management, maintenance and demolition of buildings. The elements include buildings such as office, shopping complex, hospital and clinic, hotel and resort, university and research institution, exhibition hall, school infrastructure, road and parks. It includes energy efficiency and renewable energy in buildings; indoor environmental quality; sustainable site planning and management; materials and resources; water efficiency and building innovation. Building and township applicants has a total of 21 with 11 users and 10 producers.

Table 4. Number of companies in the building and township sector

| | |
|------------------------------------|----|
| Building and Township (<i>u</i>) | 11 |
| Building and Township(<i>p</i>) | 10 |
| Total Building and Township | 21 |

In the transport sector, the scope includes incorporation of Green Technology in the transportation infrastructure and vehicles; fuel, in particular, bio-fuel, electric vehicle and mass public transport system. These projects could be about bio fuel, refueling station, hydrogen refueling station, EV charging station, green fuel production, biofuel from crops (i.e. Jatropha, soy bean, corn, etc.), bio-fuel from waste cooking oil and alternative fuel and electric vehicle (i.e. taxi, bus, etc.). The transport sector has the lowest number of certified projects with 3 users and 13 producers. This totals to 16 companies.

Table 5. Number of companies in the transport sector

| | |
|-----------------|----|
| Transport (u) | 3 |
| Transport(p) | 13 |
| Total Transport | 16 |

As shown in Table 1, there are two types of companies that are qualified to apply for the loan, the producers of green technology and users of green technology. There were 9% users or 58 companies who applied and certified and 91% producers or 566 companies (Table 6). Table 7 shows the unconfirmed projects with 29 users and 57 producers. Fig. 2 and 3 show the distribution of the sectors and energy has the overwhelming dominance over the 4 sectors with a total of 461.

Table 6. Certified GTFS projects

| Type of Company | Sectors | Number | Percentage |
|-----------------|---------------------|--------|------------|
| Users | | 58 | 9% |
| | Building (u) | 11 | 1.8% |
| | Transport (u) | 3 | 0.5% |
| | Waste and Water (u) | 10 | 1.6% |
| | Energy (u) | 34 | 5% |
| Producers | | 566 | 91% |

| | | |
|---------------------------|-----|-----|
| Building (p) | 10 | 2% |
| Transport (p) | 13 | 2% |
| Waste and Water (p) | 116 | 19% |
| Energy (p) | 427 | 68% |
| Total number of companies | | 624 |

Table 7. Number of unconfirmed projects

| | | | |
|--------------------------|----|----|-----|
| unconfirmed projects (u) | 29 | 5% | 50% |
| unconfirmed projects(p) | 57 | 9% | 10% |

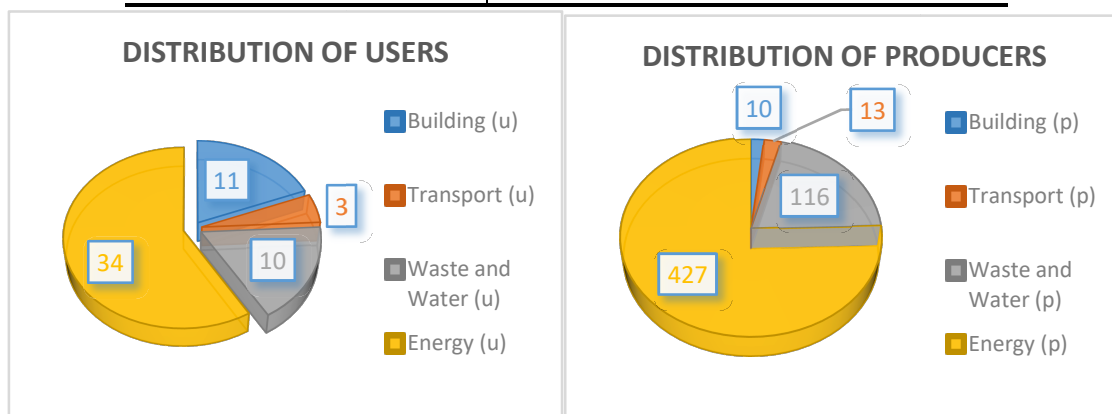


Fig.2. Distribution of users among sectors **Fig.3.** Distribution of producers among sectors

This is also the same observation in the first phase of the implementation of GTFS in 2015 [2], where energy sector takes 84.12% of the distribution and transportation gets the lowest with 0.67% of the distribution.

4. CONCLUSION AND RECOMMENDATION

The year 2020 is just around the corner. All efforts are needed to attain Malaysia’s target for a fully developed country by that year. One indication of being developed is through a stable green and sustainable society. In order to attain this, the government has shown a lot of effort and one of its brainchild is the GTFS implementation to promote green technology startups in the industry. It is undeniable that green funds are becoming increasingly important even in these times of economic crisis. Despite the issues and the challenges, GTFS is showing a positive performance. The growth in green investment and fund has motivated intense debate on the

implication of financial performance, green criteria and also the portfolio of selection process. Research done in China has shown that green fund can work as a financial power to promote green technological innovation for industries and at the same time provide benefits to their SMEs with new smart and green technologies [4]. However, the performance of GTFS in Malaysia is still lacking of empirical research. Thus, it is important for future research to provide the evidence of this GTFS in Malaysia to improve understanding of the relationship between green fund and industry performance.

Moreover, based on the current practice of GTFS in Malaysia, it also need to consider in terms of restructure their procedures regarding the sectors included in the financial scheme. The review of the current report shows an overwhelming weight for the energy sector and very low turnout for the building and transport sectors. The following recommendations are developed based on the reviewing relevant reports published by Malaysia Green Technology Corporation:

1. There should be a quota for each sector to discourage a cumulative and large number of applications into one particular sector. Each sector should be represented equally in industry to prevent an imbalance of production and sustainability in the general industry.
2. Since a particular sector is deemed less applied in, i.e. transport and building and township, more promotion and propaganda should be made on these sectors to attract more companies to apply to it.
3. Open the scheme to more private investors in the low application sector and promote these to give more incentives for companies to work on projects that these private investors need.
4. Add more sectors that are relevant in green technology such as organic farming, green agriculture and the like, to attract more companies who are more inclined in this areas of green technology and to boost growth in these sectors.
5. More advertising for the green technology should be done to reach out further to interested parties for awareness and participation in this government effort for a greener and sustainable Malaysia.

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