

Green Technology Policy as a Driver for Change Sustainability Practices among the Community in Melaka

N.A. Ahmad^{1*}, A.F.B.Mohamed², N.F.A. Hamid¹, and A. Robani¹

¹*Institute of Technology Management & Technopreneurship, Research Group SICOMM and SIR_HD, University Technical Malaysia Melaka*

²*Institut Alam sekitar dan Pembangunan (LESTARI). Universiti Kebangsaan Malaysia, Selangor, Malaysia.*

**azilahahmad@utem.edu.my*

Abstract—The suggestion for people to change their minds towards a developed society in line with the idea of implementing green technology urban development is a necessity to achieve sustainable development. Therefore, this study attempts to analyze the issues related to the need to change society's practices so that society can face the cultural environment of society based on green technology towards sustainability. This study uses a quantitative method that is used by a questionnaire instrument involving a total of 308 respondents. The results of the analysis found that those living in areas involved with green technology were higher awareness towards green lifestyle compared to communities outside the green technology declaration area. In general, there are various challenges in the implementation of green technology urban development in Melaka, especially in changing the lifestyle of the community towards the ideology of sustainable development based on green technology.

Keywords—*component; Green Technology, Community Lifestyle Practices and Sustainable development*

I. INTRODUCTION

THE successful implementation of the formation of green technology city is closely related to the issue of development and use of technology, the problems, and care of the

environment as well as the human attitude itself towards the elements and practices of Green technology. The year 2010 was the year Melaka was crowned as a state that is said to have achieved the status of a developed country and continues to step up to take on the challenges towards a green technology city-state. This situation shows that Melaka is so committed to progress in terms of development and at the same time strives to become a sustainable state in terms of environmental protection.

From 2010 to 2015, the issue of green practices is still poorly understood by the community it is not a common practice among local communities (Blueprint 2011-2020). Green practices need to be inculcated as a new culture that needs to be developed in line with the implementation of the green technology city implementation policy. Therefore, the recommendation for the community to change their mindset towards lifestyle and adopt a green culture needs to be clarified in more depth. This situation needs to be inculcated and accustomed so that the community knows, is aware, and wants to practice all the concepts that are highlighted, especially for the success of the development ideology based on Green technology (Liviu Istrate, 2012).

Research objective:

1. Study the importance of Green Technology policy as an agent of lifestyle change in society.

2. Analyze the need to change the mindset of society on the issue of green technology development and its impact on society's lifestyle.

II. BACKGROUND OF STUDY

Implementation of Green Technology Policy in Melaka: State Government Commitment.

A proclamation related to the implementation of Green Technology-based development was launched on 20 October 2010 (Buletin 2012-2015). The policy has set a target to make the state of Melaka a Green Technology City that is sustainable and resilient. The vision of this policy development is to make Melaka a Low Carbon state by 2035 (GCAP, 2015).

While its mission is as follows:

- i. reduce the rate of carbon emissions.
- ii. creating sustainable townships and environmental conservation.
- iii. efficient of energy use and increase the use of renewable energy.

The implementation period has been divided into 3 phases (DPNM, 2014), namely:

1. Short term until 2017-2018-involves the planning phase of the Study (Preparation of data and inventory)
2. Medium-term (2017-2020)-involves a phase to increase and promote green technology projects and programs
3. Long-term (2017-2035)-involves the phase of the improvement of the application of Green technology as a whole.

III. METHODOLOGY

This study was conducted in the state of Melaka and focused on the territory of Hang Tuah Jaya Municipal Council because this area has been declared as a municipal area with the concept of Green Technology City. The research method used is through random sampling in the study area using a questionnaire involving a total of 308 respondents. The selection of respondents was focused on respondents aged between eighteen to sixty years only. The measurement scale used for this study is adopting the

Guttman scale as well as the Likert scale. All data obtained were analyzed using Statistical Program for Social Sciences SPSS version 25.

IV. DISCUSSION

A. Community acceptance of the Implementation of Green Technology Development

The knowledge and practice of the green movement in developing countries are said to be relatively backward, compared to Western countries (Mark A Dutz, 2012). However, concerns about environmental issues are increasingly taken into account by the community. Initially, awareness related to the term green began to be seen to exist among consumers who were found to influence them to adopt behaviors that are concerned with safety and environmental well-being (Kamaruddin et al, 2011). Attitudes towards caring for the environment are also influenced by ecological factors (Mohd Nasir & Jamal Ali, 2018).

Based a study conducted in 1990 (Abdul Samad) found that the community is aware of the rate of environmental degradation but they do not pay due to attention to reduce environmental problems. Awareness to maintain and balance the environment and give concern to this issue began to increase, especially among urban consumers in Malaysia around the beginning of 2000. Until 2003, public perception related to green technology is still at a relatively low level, according to Karmilah, 2014 noted that awareness among highly educated consumers of environmentally friendly products is still at a low level.

Even the majority of society does not prioritize products with green technology elements or are environmentally friendly. However, the public perception of the benefits of green technology products is positive as a study presented by Syuhaily and Ooi (2003) found that the majority of respondents in Kuala Lumpur, which is 72% showed a positive attitude towards green products.

Society also needs to be constantly exposed to the benefits of green technology practices. Siti Rohani (2013) suggested that the emphasis on education and community awareness should be

given priority for the well-being and security of the earth, especially for the use of the next generation. The earth is said to have been overly polluted. Various environmental problems often occur especially in the city, declining water quality rates, forest problems, waste, and so on. This situation requires human beings to change their minds and ways of life so that the level of awareness towards the application of green technology can be realized in the interest of balancing all the problems of nature and hope that nature can survive for future life.

The study of Mohamad Bokhari et.al (2014) showed that there is a good knowledge of community understanding in fostering awareness towards implementing green technology-based practices among the people of Melaka. The study also said that the level of awareness, understanding, and practice about green technology has been high among the community will be able to ensure a peaceful and prosperous life.

B. Issues of Mind Transformation and Community Lifestyle

Based on the development of the term "Greens" according to Western researchers of the 1990s era claimed that initially the term "Greens" was directed to a term that relates to the transformation of the main lifestyle of society with emphasis on ecological, social, justice and peace. At least some of their claims have been recognized as valid and accepted in mainstream politics around the world. However, it is not clear what changes need to take place, as there is the potential for conflict between such green values in that era (Joan Roelofs, 1996).

The success of the implementation of development transformation in our country will certainly yield a relatively satisfactory result if the whole society from various categories adapts the important approach process that has been thought of by environmental researchers since the early 2000s related to (Kadir Ariffin, Jamaluddin Md Jahi, et al, 2006):

i) Develop policies, procedures, and documents on quality, environment, health, and safety as well as all business risks;

ii) Train staff at all levels of the organization to link the elements of quality, environment, and safety, and health;

iii) Prioritize the process approach in implementing the management system.

The transformation of the mind towards society in parallel with the implementation of green technology urban development needs to be applied by the society. The surge for the following transformation agents is identified, can occur with the existence of a policy or policy introduced to society in stages. (Jamaluddin Md Jahi, 1996) This situation is important because based on a study conducted by Anny Lim (2010) stated that the level of public awareness of green technology has not yet reached a satisfactory level. Ongoing encouragement to make the public aware of the national agenda to understand and apply green technology practices needs to be done continuously.

According to Abdul Samad Hadi (2008), usually, the concept is associated with a form of balanced development that is the economy grows to build wealth, wealth is used to develop community identity, various infrastructure that can increase access to community members to various living needs that can eventually boost the quality of life to the point of providing an environment that allows every citizen to realize their potential. At the same time, the environment needs to be taken care of, preserved and the damaged ones preserved so that the benefits of progress enjoyed by the current generation can be enjoyed and refined by future generations (Mohamed Affendi Oмарdin & Nazirah Zainal Abidin, 2014).

Further studies found that the concept of green technology, as well as the concept of sustainability, is the hope of the entire world community towards development whether the development of the city itself or related to the application of products, equipment, and systems used to conserve the environment and natural resources. Also as a step towards minimizing and reducing the negative effects of human activities (Nor Azilah et.al 2017).

A study by B.C. Chew in 2016 stated that the Melaka government hopes that the

development target towards a green city-state will be achieved in the era of 2020. However, Melaka also faces several sustainable problems such as traffic, public transport, health problems, water crisis, and others. It is a big challenge for the state of Melaka to implement a complete Green city branding. The branding of Melaka as a Green Technology City is defined as an approach to integrate urban planning in responding to climate change by optimizing the availability of natural assets as well as to promoting economic development while maintaining a competitive city, especially in Green technology-based development.

The factors identified for the success of the mission towards the implementation of green technology concept development are a result of the success factors received by Melaka in the developed state development mission that was successfully achieved in 2010. Similarly, a study conducted by Choon Shay Wei (2010) stated that after applying the Sustainable city index in Melaka it was found that the index is 0.72 and only less than 0.03 to achieve the sustainable level. This position explains that Melaka is in the first position compared to the major cities involved in Malaysia.

Next is the award received from the Department of Environment in collaboration with the Department of Local Government, Ministry of Housing and Local Government, and the Institute of Environment and Development (LESTARI), UKM which provides technical support has started the award to give recognition to local authorities who have tried to combine dimensions environment in the planning, administration, and implementation of its policies, programs, and activities. This evaluation is based on five (5) criteria:-

- (i) Physical Environment
- (ii) Ecological Initiatives
- (iii) Environmental Services
- (iv) Environmental Administration
- (v) Education and Awareness

For the evaluation session of the Sustainable City Program 2009/2010, a total of 34 Local Authorities have participated in the following categories:-

- 1. Category 1 - Local Authorities(15)

- 2. Category 2 - City and Municipal Local Authorities (9 Local Authorities)
- 3. Category 3 - Regional Local Authorities (10 Local Authorities)

For that category, Melaka has awarded the winner of the Sustainable City Award - Environment Award 2009/2010, Special Award: River Management, and also the Sustainable City Award - Environmental Award 2009/2010 Special Award: Facilities for the Disabled. Melaka also received the nickname of the Cleanest City from 2014 to 2016.

V. RESULT AND FINDINGS

As a result of the policy formulation and implementation of the development of the Green Technology City, especially in the state of Melaka, it has become a variable agent that indirectly leads to increased understanding and practice among the community. This situation can be shown based on the findings of the study as discussed below.

Based on the planning plan that has been planned by the state government, then the data related to the study on the situation and community acceptance is very necessary to explain the mission of implementing sustainable development with the concept of green technology elements. This study was conducted in the MPHTJ area as a space area to evaluate respondents involving a total of 308 respondents, where male respondents numbered 143 people, while the total number of female respondents was 165 people. Schedule 1 below describes the relevant matters.

Schedule 1: Number of respondents based on

| Gender | Total | % |
|--------|-------|------|
| Men | 143 | 46.4 |
| Women | 165 | 53.6 |

Discussion on respondents' awareness and practices towards Green Technology

Next is the percentage of individuals 'awareness of green technology knowledge and practices. Tables related to this matter are shown in Table 2 and Table 3.

Schedule 2: Attitudes and Community Involvement towards Green Activities

| | | Total | % |
|--|-----|-------|------|
| 1. A curious attitude | Yes | 255 | 82.8 |
| | No | 53 | 17.2 |
| <hr/> | | | |
| 2. Daily involvement in green activities | | | |
| | Yes | 240 | 77.9 |
| | No | 68 | 22.1 |

Table 2 shows the percentage of respondents' awareness of the elements of Green technology. A total of 82.8% expressed their attitude and desire to learn about green technology issues. Meanwhile, 14.6% were ignorant. About 2.6% showed their uncertainty in the knowledge element on green technology issues. This situation shows a slight increase in the percentage of respondents who are aware of green technology compared to the beginning of 2000.

The percentage of respondents' attitudes and practices towards green technology activities showed a slight decrease in the percentage compared to the attitude of awareness, where the level of respondents' practices towards green technology has decreased by about 5% to only 77.9% who practice green technology activities. A total of 22.1% did not notice green technology practices. Some respondents took a neutral stance in responding to green technology attitudes and practices. However, this attitude has shown the community's concern and concern for the implementation of the green technology policy. This situation is very different from the situation of society in the early 2000s which only showed a positive attitude towards green technology products to implement practices in monitoring green technology activities.

Schedule 3 Awareness of Green Technology Policy based on career factors

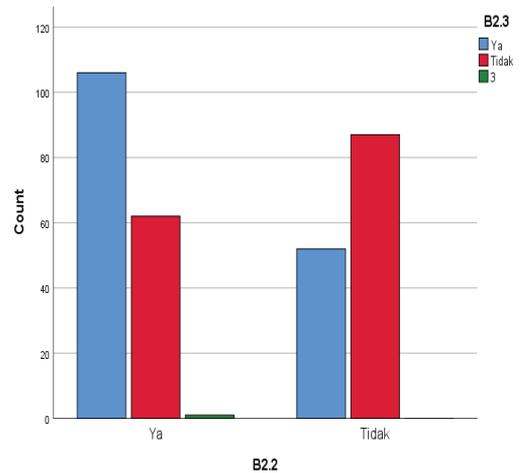
| Career | Yes | No | Not Sure | Total |
|-----------|-----|-----|----------|-------|
| Public | 71 | 43 | 0 | 114 |
| Private | 17 | 7 | 0 | 24 |
| Self-work | 2 | 6 | 0 | 8 |
| Others | 68 | 93 | 1 | 162 |
| Total | 158 | 149 | 1 | 308 |

The study of community awareness and understanding can be seen clearly that there

is a real comparison if the system needs to be promoted to the community as happened in the state of Melaka. Based on the information in table 3, the community categories are seen to be based on differences in terms of employment, those responsible for the development mission of green technology implementation should pay attention to other employment categories. This is because the fields of employment that are in other categories are represented by industrial workers, traders, and the self-employed who have shown their indifference concerning the encouragement towards the adoption of green attitudes and practices. Based on the table, 57% said they did not care about green practices and the remaining 43% said they did not care about green practices. This situation is very worrying and remedial action needs to be taken.

Schedule 4 Respondents living in Green areas with those not living in Green areas Based on practice

| Comparison between factors Stay in the Green area or not | | | |
|--|-------|-------|-----|
| | Yes | Total | % |
| 1. Stay in the Green Area | Yes | 106 | 67 |
| | No | 52 | 33 |
| | Total | 158 | 100 |
| 2. Not living in the Green Area | Yes | 63 | 42 |
| | No | 87 | 58 |
| | Total | 150 | 100 |



Graph 1 - Percentage of people living in Areas declared as Green Technology areas with Percentage of practices implementing Green Technology activities

Based on Table 4 and Graph 1, it is found that the percentage of people living in areas

declared Green shows a high percentage in adopting Green attitudes and practices among the community. This rate covers over 50% of its community understands and cares about Green knowledge and practices. This situation turns out to be different from communities that do not live in the Green area as shown by the graph above. Significant comparisons should also be given to implementing a development plan. Factors related to the declaration of the implementation of government policy also play an important role in showing the success of a plan.

Around almost 10 years after the declaration of Melaka as a Green technology city, it was found that the percentage of people in the study area took note of Green Technology at a relatively satisfactory level as shown in the graph above. However, based on the observation of several things and actions that need to be improved is for the category of people under the age of 18 to 30 years because should practice green activities holistically to succeed in the implementation of development towards a fully sustainable city. This situation needs to be improved to increase the awareness of young people to implement green technology-based practices as shown in Table 5.

| Academic Background | Yes % | No % | Total |
|---------------------|-------|------|-------|
| 1. SPM/ STPM | 82.5 | 17.5 | 156 |
| 2. Diploma/ Degree | 48.1 | 51.9 | 135 |
| 3. Master | 54 | 46 | 13 |
| 4. PhD | 100 | 0 | 4 |
| Total | | | 308 |

VI. CONCLUSION

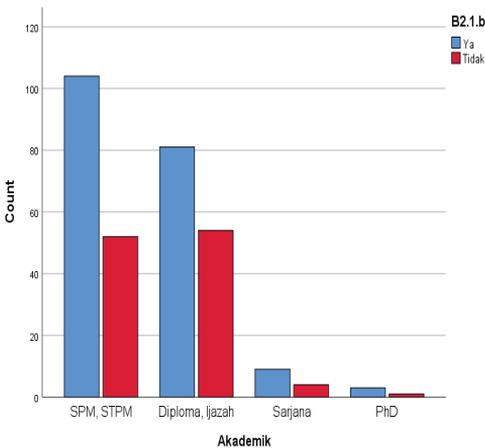
In summary, there are three main elements for the state of Melaka toward Green Technology City is through the development of its product system, people, and environment. Based on this study found that the human element is one of the main factors that will succeed in the development mission of the Green Technology City, where human curiosity is very important in changing the mindset of society to also succeed in a policy that has been planned by the government. However, in achieving the mission of green technology city development, it can be indirectly concluded that the policy that has been introduced can drive a change in the mindset of the community and can even raise awareness among the community itself as well as the government as the main supporter in the successful implementation of existing policies. Some findings that need to be taken into account need to be highlighted so that the mission and vision towards the desired development can be realized. In addition, with the close cooperation between the government and the people, surely this plan will be successfully produced as well as possible.

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Graph 2 - Percentage of people who are aware of the Implementation of Green technology based on the category of Education level.

Schedule 5 Green Activities by Academic Background

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