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Renewable energy development in Malaysia: Communication barriers towards achieving the national renewable energy target

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Abstract. In Malaysia, the utilization of renewable energy (RE) as in “five fuel diversification policy” has been intensified since 2000 in the 8th Malaysian plan (2001-2005) as an addition to the supply from conventional energy sources. However, the RE goal in the policy was achieved minimally and later continued in the 9th Malaysian plan (2006-2010). At the end of 2010, The RE goal was again achieved minimally. Previous studies have been carried out to understand the influence of technological, economic, social and political barriers to the development of renewable energy in Malaysia, but not much on the communication barriers. Therefore, this paper will thoroughly examine the perceptions and understandings on the communication barriers towards renewable energy development in Malaysia.

1. Introduction

To providing a consistent, inexpensive, maintainable, secure and low carbon energy supply to the society are not easy to the policymakers. Whilst electricity remains unavailable to a significant proportion of the population in 2019, providing information related to the above-mentioned energy issues to the 32.58 million population of Malaysia is challenging [1,2]. Renewable energy (RE) is seen as one of the viable solutions to Malaysia’s energy needs, with the gradual depletion of fossil fuels.

The utilization of renewable energy (RE) as in Five-Fuel Diversification Policy has previously been intensified in the year 2000 to supplement the supply from conventional energy sources. In this respect, the fuel diversification policy, which comprises oil, gas, hydro and coal, has been extended to include RE in the 8th Malaysian plan (2001-2005), and the government set itself a target of obtaining 5% (500MW) of its energy from renewable sources by 2005 [3,4]. It was the first time in the country that RE was targeted to be the major contributor to the generation of electricity due to the significant depletion of oil and gas since the launch of the first major energy policy in 1949 (Central Electricity Board) as shown in Table 1 [5]. In addition, six other major energy policies launched later from 1974 to 2000 did not include the element of RE (Table 1).

However, at the end of 8th Malaysia plan in 2005, The Five-Fuel Diversification Policy ended up reaching only 0.3% of the target by the year 2005 where only 12 MW was delivered to the grid under the Small Renewable Energy Power Program (SREPP) [4,6].



Thereafter, the government decided to continue the Five-Fuel Diversification Policy in the 9th Malaysia plan between 2006 and 2010 [7]. The target of obtaining 5% of RE in the country's energy mix was again set [8]. Nonetheless, by the end of the 9th Malaysia Plan, the RE goal once again was not achieved, and so far, only 8.3% (41.5 MW) of the target (1% of the total energy mix) has been reached [8–10].

Table 1. Major Energy Policies in Malaysia from 1949-2013 [1]

Major Energy Policies in Malaysia from 1949-2013		
Year	Policy/Event	Main Agenda
1949	Central Electricity Board	Authoritative board in integrating electricity production, transmission and supply
1974	Petroleum Development Act	The conferring of all petroleum-related resources to Petroleum National Berhad (PETRONAS), a wholly owned governmental body.
1975	National Petroleum Policy	To deliver appropriate regulatory guidelines for Malaysia's oil and gas industry in attaining pre-set economic goals and objectives.
1979	National Energy Policy	To assist as a pivot policy which focuses on three ideas: supply, utilisation, and environmental.
1980	National Depletion Policy	To assure an effective and safe utilisation of natural reserves, especially oil.
1981	Four-Fuel Diversification Policy	To avoid over-reliance on oil whilst confirming dependability of oil, gas, hydro and coal in Malaysia energy mix.
1990	Electricity Supply Act	To function as a governing organisation in the electricity supply industry, ensuring sensible energy prices, permitting and monitoring of electrical installations, and encouraging competent electricity usage.
2001	Five-Fuel Diversification Policy	To introduce RE as the fifth source in the energy mix
2001	Small Renewable Energy Power (SREP) Programme	To endorse rigorous practice of RE in small scale projects, sustained by the enactment of Special Committee on Renewable Energy (SCORE)
2001	Energy Commission Act	To control commercial and monetary performance and supervision of the energy industry in Malaysia (based on Electricity Supply Act and its subsidiary policies)
2006	National Biofuels Policy	To lessen needs for fossil fuels, promoting use of palm oil and stabilising its price in the energy market countrywide and worldwide
2009	National Green Technology Policy	To increase the development of green technology in Malaysia whilst keeping adequate competitiveness internationally and building cognisance for prospective generations.
2011	New Energy Policy	To begin initiating a secure and managed energy supply by stimulating RE usage, consolidating governance and embracing market-based energy pricing.

Previous studies have been conducted to understand the influence of technological, economic, social, political, agreement and knowledge barriers to the development of renewable energy in Malaysia [3,11]. However, no study has been conducted to understand the communication barrier to development of renewable energy. Hence, this paper aims to identify the gaps specifically in the aspects of communication and recommend a suitable framework in management context to facilitate the implementation of RE policies in Malaysia.

2. Communication

Based on Aristotle Model of Communications explain that any communication need to have an sender and receiver for any communications. Sender as a encoding will send any information and message to the decoder as a receiver. The process will repeated when the receiver process back the information and reply back to the sender. The encoding and decoding will changes from time to time to follow the process of communications.

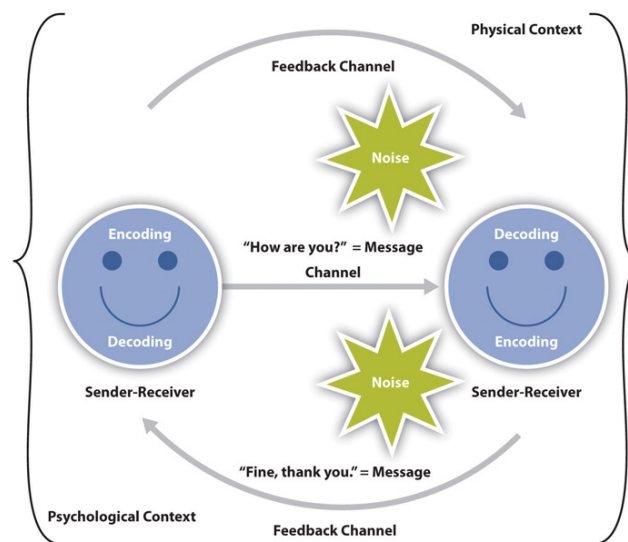


Figure 1. Aristotle Model of Communications

Any conversation or distribution of information will follow the same process as a communication process. Some of the conversation will include the disturbed from both individual. It will effected the process of communication on that time. This is normal process of communications for the personal or individual. Its slightly different with the process of organisation communication. Any organisation need to be more systematic and well planned before discussion or to distribute any information to the public. They need a right person to give an explanation to the public. Not all people know how to talk systematically. The management in organisational need to identify the right person who will give talk as a spoke person on behalf of the organisation. That person should be trained and well known about the issues and use the right word and channel to deliver to the public easily.

2.1. Corporate Communication Strategy Framework

Any organisation will set the outreach objectives and identify target audiences and lists before deliver any information to the public. Then create clear compelling messaging and tailor with the target audiences. To deliver the message need to strategize the plan and need to study about the people as a target audience. It will give impact to the any plan or project that want to deliver, and will collect back the data for any improvement as a result.

2.1.1. Challenges and Communication barriers. Efficiency of a policy is strongly dependent on cooperation between entities involved in its implementation and these benefitting of it. There cannot be any cooperation without exchange of information. Significant efforts and contributions must be done to remove the barriers that hindered Malaysia from attaining its sustainability goal.

2.2. Government Agencies and Private Sectors

Main functions of government communication are to inform, advocate or persuade for policies and reforms and also to engage with the community. Citizens who are well informed of the underlying objectives and instruments are able to act in accordance with the expectations of the government. Developing renewable energy in Malaysia requires a fundamental system change, and the government was not efficient in its role to make this happened. Various institutions in Malaysia such as Malaysian Palm Oil Board (MPOB), Sustainable Energy Development Authority (SEDA), Department of Statistics Malaysia (DOSM) consistently collected related data (e.g. yield and production of oil palm industry, number and capacity of renewable power plant) [12] but it was unorganised and relatively scattered. As a result, the consolidation of the data for further usage became challenging. It was also difficult especially for researchers to get these valuable data from these institutions for further use and improvements.

2.3. Ineffective Campaign

A well-balance between social, environmental and economic aspects is necessary to achieve sustainable development for industry [12]. Failure to raise social awareness about the important of RE industry in Malaysia acted as one bottleneck of the development of RE industry.

The present era should be and at times is marked by a commitment to communicating risks responsibly through information and advocacy [13]. Apart from the highly technical and academic nature of the different sharing sessions given by the RE experts, the government should also utilise media campaign to increase public awareness on this issue. Academic sharing sessions comprise advanced technical discussions and technical jargons that might not be understood by the general public. The discussions were targeted to update those who already have good knowledge in this issue. As for the general public, mass media campaigns communicating attractive messages understandable by laymen targeted for attitude change is very much needed. The adoption of social media by leading public health organizations reflects a widespread sense that these tools are increasingly necessary to reach demographics who are abandoning traditional broadcast technologies (e.g., telephones, television) such as teens, or a significant portion of the public who are rapidly transforming the manner in which they interact with experts [14].

In order to generate the public trust, the government has to practice transparency by ceasing to sustain the Independent Power Producers (IPPs) with generous Power Purchase Agreements (PPAs) and allow free competition through an open bidding process. This transparency will ultimately benefit consumers specifically [15], and the country at large.

2.4. Implementation at school level

The concept of RE and energy efficiency should be introduced into the curricular activities in secondary schools and universities. The concept of RE is already in the syllabus at secondary and universities text book, but the implementation is still minimal. Schools and universities should organise more interesting activities related to RE to educate and attract youth in Malaysia.

2.4.1. Emphasize “3R” to students

Recycling, for example, is an important factor in helping to reduce the demand on resources and the amount of waste requiring disposal by landfilling. The awareness applied from the beginning in schools should be able to increase the recycling rate among students in Malaysia. Education is a key factor that influenced the success or failure of any waste minimisation programme, hence the need for an appropriate syllabus to be incorporated in the primary school curriculum.

The campaign of 3R (Reduce, Reuse and Recycle) campaign can only be effective through education. This may take years for people to understand, need to start from the secondary and primary school. The 3R awareness is the first step in reducing waste before it even reaches the landfill [16]

2.5. Private Sector and People

The major problems associated with RE generation, which is the **lack of expertise** in optimization of biomass residue has slowed the progress of biomass utilization in Malaysia [15]. This resulted into inefficient energy management and available technology. Most industries are not aware of the benefits and are reluctant to take the risk of utilizing biomass for power generation [17]. Public sector embarking on a strategic approach to corporate sustainability expect their contributions to enhance business performance and to support the long-term interests of the company.

Corporate Social Responsibility (CSR) is define by the International Standards Organization (ISO) as the “responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behaviour; and is integrated throughout the organization and practiced in its relationships,”(ISO 26000 – Social Responsibility, 2010) [18].

The issue of corporate social responsibility broadly defined to include such concepts as sustainability, sustainable development, triple bottom line, corporate citizenship, and integrated sustainable enterprise management – is now challenging the very foundations of the business strategies of the world’s leading organizations.

3. Recommendation

The government should set up independent Board Members under the Prime Minister Department (not Ministry of Energy or any other subordinated ministries), not only to formulate appropriate legislations and policies, but also to initiate and manage Research, Development and Demonstration (RD&D) efforts, and monitoring the implementation of RE planting up [8]. The Board must also orchestrate from Technopreneurs, Government Linked Companies and Universities, which will be the drivers of these initiatives, with assistance in equity financing, research and capital grant, soft loans and tax incentives. In Malaysia these were done through the Prime Minister’s Department. For example, the Malaysia Industry-Government group for High Technology (MIGHT) is a section that co-ordinate the implementation of high tech projects like ICT projects, nanotechnology, etc. between the government and the private sector.

It is also crucial to redefine the term “Renewable Energy” by incorporating both diversity (no restriction on the mode of generation and feedstock used) and depth (no restriction on capacity and distribution i.e., distributed generation and deregulation) in the definition.

To move towards sustainable electricity generation alternatives and measures to year 2030 for Malaysia we recommend the following measures:

1. Proper strategy & tactic
2. Understand the nature of your different audiences and communicate accordingly.
3. Hire expert. Not anybody know how to communicate strategically
4. Relate communication with organization objectives/ goals

4. Conclusion

This study set out to determine the barriers leading to the failure of renewable energy policy in Malaysia between 2000 and 2010. The findings from this study made several contributions to the current literature of the barriers to renewable energy development in Malaysia by discussing:

1. Political barriers, including the government’s failure to play a powerful leadership role for the necessary changes, weak R&D, unclear relationship among the three levels of governments, feeble and unrealistic renewable energy targets.
2. Knowledge barriers, including the lack of knowledge and skill among the technicians and the lack of intervention strategies to create awareness among people and end-users.

This article suggested that the low-performance of the five-fuel diversification policy in Malaysia is a multi-aspect phenomenon. Few barriers contributed to it were previously discussed and the communication barrier was highlight in this paper. It is hoped that the government will take necessary actions to improve the situation.

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