

A REVIEW ON CURRENT RENEWABLE ENERGY DEVELOPMENT AND FUTURE PROSPECTS IN MALAYSIA

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Overview

Renewable energy (RE) development has long been supported by the dynamic natures of local and global economies as well as the government policies. A good support policy should be able to provide sustainable funding and efficient market mechanisms that are easily accessible to all industry players. This work reviewed the current energy landscape and RE development in Malaysia. Renewable energy has been introduced since the year 2000 through Five Fuel Diversification Strategy which is basically a national strategic plan to reduce the country's heavy dependence on fossil fuels by diversifying the fuel resources. This work investigated RE development before, during and after the national policy was implemented in 2000. After 18 years, the cumulative installed capacity of RE is 473.5 MW which is only around 1.4% of the total installed capacity of 33,023 MW connected to the national electricity grid. This work adopted the strengths, weaknesses, opportunities, and threats (SWOT) analysis method to assess the potential success of an investment in RE industry and the major barriers that currently hindered its rapid development. The fact that RE reserves are still abundantly available and there is a large amount of RE power being generated off-the-grid, suggest that there are many windows of opportunity to tap into in the future. Furthermore, in order to accelerate the penetration rate of RE to the grid, the threats or risks associated with the national and international agencies, energy stakeholders as well as the public acceptance should be identified and minimized. An innovative policy framework that provides a transparent and efficient RE market should be put in place to attract the industry players and major energy stakeholders. Besides that, energy efficiency should be seriously deployed as it has the potential to raise the affordability of RE by reducing the generation cost while keeping the energy demand in balance.

The paper is organized as follows: Firstly, the introduction section provides a brief overview of the current energy landscape and renewable energy development in Malaysia. Then, the second section discusses the methodology to perform the SWOT analysis. The third section demonstrates the findings and the fourth section describes the policy recommendations and the key strategies to overcome the barriers and induce future investment. Finally, the conclusion is derived to summarise the findings.

Method

Strengths, weaknesses, opportunities and threats (SWOT) analysis method on four RE resources namely biomass, biogas, solar and mini-hydro.

Results

1. The strengths, weaknesses, opportunities and threats of renewable energy resources and development are identified and presented.
2. Biomass and biogas are plentiful yet still underdeveloped.
3. Strategies to lift the barriers for a sustainable resource supply, reliable conversion technology, and efficient energy market are elaborated. A centralized collection hub is needed to better manage the resources.
4. Discussion on policy recommendation. A fully grasp on the upstream and downstream activities related to RE resources would make a holistic, long term strategic planning possible.

Conclusions

The potential of RE is huge in Malaysia. However, it is still rather new to the energy industry and therefore needs extensive support from the government and non-governmental organisation (NGO). With a proper planning and execution, this industry will definitely thrive and become a major part of the national energy mix.

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