



The Impact of Hydropower Energy on the Environmental Kuznets Curve in Malaysia

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ABSTRACT

The present research examines the effect of hydropower energy consumption in testing the Environmental Kuznets Curve in Malaysia by using the annual time series data over the period from 1978 to 2016. The present research applied the advance econometrics to serve the purpose of investigation and therefore used the auto regressive distributed lag (ARDL) bound testing approach for assessing the presence of long-run relationship between the variables. The results of ARDL bound testing approach confirm the valid long run relationship between hydropower energy consumption and economic growth with carbon dioxide emission in Malaysia. The final outcomes confirm that hydropower energy consumption and square of economic growth have significant and negative impact on carbon dioxide emission whereas, the economic growth have a significant and positive impact on carbon dioxide emission. Furthermore, results also confirm the existence of inverted U-Shape curve in Malaysia. The results provide a solid evidence for the policymakers to focus on hydropower energy consumption while formulating the policy for the reduction of environmental degradation in Malaysia.

Keywords: Hydropower, Green Energy, Renewable Energy, Sustainable Development

JEL Classifications: O11, Q20, Q23,

1. INTRODUCTION

Energy is considered as indispensable in today's World. It led to generate the power that is resulted from the deployment of physical or chemical resources in order to pull together the essentials of electricity, heat and fuel that are crucial for human and economic development. In modern economies, energy is considered as the significant catalyst of economic activities (Apergis and Payne, 2015). It is utilized as the major input in industries, commercial, transportation and agriculture sectors. Though, the vitality of energy is not solely limited to businesses. One of the integral facets of energy is also the household energy. The countries have witnessed that societal development and communal orders are changed from subsistence to the current advancement from the utilization of energy (Othman et al., 2017). It is now considered as the important part of human development as it leads to bring improvements in peoples' quality of life. Furthermore, the

utilization of biomass as an origin of energy is the significant feature of conventional agriculture systems. The image of present-day industrialized society is based on the utilization of non-renewable energy sources including coal, oil and natural gas. These elements have turned out to be critical component of all communal developments in present civilization.

However, the literatures have also found that excessive energy dependence can also bring adverse effects on environment and thus hinders the process of sustainable development (Jebli and Youssef, 2015; Dogan and Seker, 2016; Sharif and Afshan, 2016; Sharif et al., 2017; Sharif et al., 2018). Furthermore, the theoretical foundations in this regard present many studies that capture the effects of numerous variables that hinder environmental sustainability (Kobayashi et al., 2013; Henry, 2014; Danbaba et al., 2016; Jabarullah et al., 2016; Zomorodi and Zhou, 2017). Among them, the framework of environment Kuznets curve