

Development of Sustainability Assessment Framework in Hydropower sector

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Abstract. Nowadays, Malaysian demand in energy sector was drastically increase due to technological developments. Since, hydropower is one of potential renewable energy source in Malaysia. The largest electricity utility company, Tenaga Nasional Berhad was provide an electricity to more than seven million people via independent suppliers in peninsular Malaysia and Sabah by intended a potential sustainable hydropower system. In order to increasingly the power capacity from current use, 1882 MW to more than 3000 MW by years 2020. In this study, the environmental issues and also the penalty to the responsible company especially on Tenaga Nasional Berhad (TNB) towards their project or business are one of the problems. Other than that, every project or business has to prepare a sustainability statement or sustainability report as vital to Bursa Malaysia Securities Berhad under their listing requirements. Next, the sustainability performance on their project cannot be determined to achieve the key performance indicators (KPI) satisfaction from Government, stakeholder or any responsible agencies. This study presents an exhaustive review of these studies and suggests a direction for future developments. Sustainability Assessment framework or self-assessment is decidedly as a significant framework to assist towards sustainability reporting and to produce a Sustainability index for Hydropower sector using a mathematical model study. The results reveal that, the quantitative measurement from Sustainability Assessment framework to Systematic Sustainability Assesment tool can be produce. In doing so, it is possible to improve the performance of the project especially in hydropower planner.

1. Introduction

In recent years, there has been an increasing interest in sustainability at many sector and project all over the world. The first serious discussions and analyses of Sustainability emerged during 1983 at new World Commision on Environment and Development (WCED, 1987)[1] by Norwegian prime minister Gro Harlem Brundland. Then, after four years they release their own report about sustainability in 1987 [2]. The purpose of that report is to provide long-term environmental strategies, to define shared perceptions of long-term environmental issues and to concern into greater co-operation among developing countries and between countries at different stages of economic and social development that interrelationship between people, resources, environment and development[3].

In Malaysia, Bursa Malaysia always encourage a sustainability idea as the key success of their business today. W. Stubbs et al., [4] was surveyed the performance of sustainability at Malaysia. The majority of the companies in Malaysia which is 77%, only 40% embed a sustainability concept in their overall project or business. S. B. Thai et al. [5] with their research on Companies that are listed in Bursa

