

Supply Chain Management Model of Wood Biomass Producing Hydrogen Fuel for Malaysia's Electricity Industry

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Abstract— Green energy is becoming an important aspect of every country in the world toward energy security by reducing dependence on imported fossil fuel import and enhancing better life quality by living in the healthy environment. This article analyses available literature as an approach toward determining physical flow's characteristic of waste wood biomass in high scale plantation toward producing gas fuel for electricity using gasification technique. The aim of this study is to develop a conceptual supply chain management model of syngas fuel from wood waste biomass using direct gasification conversion technology. Literature are reviewed based on energy security, Malaysia's energy mix, Biomass supply chain management and processing technology. This paper uses the theoretical model of transportation (Lumsden, 2006) and the function of the terminal (Hulten, 1997) for research purpose. The theoretical framework used to answer the research questions are Supply Chain Operations Reference (SCOR) framework and Sustainable strategy development in supply chain management framework. To incorporate biomass unique properties, Biomass Element Life Cycle Analysis (BELCA) which is a novel technique develop used to understand the behaviour of biomass supply based on biomass's elements.

Keywords— *Green Supply Chain, Natural-Resource, Biomass, Green electricity, Hydrogen fuel*