

**UNIVERSITI TEKNOLOGI MARA**

**VERSATILE AND FOLDABLE  
GAS/BOX TROLLEY**

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## **ABSTRACT**

Gas transportation has become an essential for everyone in the South East Asia as it is supplied by using gas tank rather an integrated gas system like in Europe or United States. However, The Eastern nation like Malaysia or Indonesia are becoming more denser populated community as the more families are likely to live in high rise apartment. It is harder especially for old people to transport the gas to their home considering the weight of cooking gas are rather heavy. Also, the gas trolley usually has a one-purposed use that is to increase mobility of the gas tank. So, the customers need to invest more to buy another trolley to transport box or heavy item. Gas trolley that exists are usually has low capacity and only transport one item at the same time. Due to that, this Versatile Gas/Box Trolley is created. This product will go through a design selection process and is required to create an isometric view using state of-art SolidWorks 2019. As a result, this product may help people who have a problem in transporting item and looking for cheapest option.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of Study**

In Asia, the gas industries are dominated by independent gas system due to the abundance of gas to supply the demands of LPG for cooking, lab gas and for small industries. The record released by IEA shows us that ASEAN region use 5.7 EJ of natural gas in the year 2020. The rising of energy usage also indicated that the demand of LPG tanks was also increase in the wake of 2021 as the pandemics are over.

In Asian community, the gas system here are not available since the 50's due to Communist Incursion after World War II that causes the interconnected gas system are unavailable due to high probability of sabotage of gas pipeline by the Communist. Meanwhile, the interconnected gas system is prone to explosion when it does not have a proper maintenance, thus increase the probability to leaking caused people changed to LPG gas tank as it requires much less problem and maintenance. Usually, LPG were supplied in 14 kg gas tank.

However, to transport the 14kg alone require a large amount of energy to transfer from a place to another place. In the high rising world of East Asian, it is really frustrating to literally lift the gas tank up to the 10th level above. Especially for the senior citizen, they will find a hard time to transport the tank up to their home. Thus, the gas trolley is created to ease the transport the gas. But it has limited capacity with a limited mobility in irregular surfaces.

Overall, the background study provides good reasoning for the research of this project by issued the purpose of the creation of gas trolley and why it is relevant in Asia also, highlighting the need of an improvement for the gas trolley to ensure it is reliable in any situation that involving its purpose. With summarizing these features, the study aims to contribute to improve the gas trolley functionality and versatile the functions of the trolley.