CHAPTER 1
INTRODUCTION TO SAFETY AND LONGEVITY IN MALAYSIA ENERGY PRODUCTION

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1.1 INTRODUCTION

This book is related to energy production industries in Malaysia and also related to the right processes required to prevent safety and health issues. Malaysia is located in the South East Asia (SEA) and consists of the Peninsular on the West, and Sabah and Sarawak on the East Malaysia. These two territories are separated by the South China Sea. Petroleum industry in Malaysia started in 1910 when hydrocarbons were first discovered in Miri Sarawak with the production of 83 barrels per day (bbl/day). The production was gradually increased and reached its peak in 1929 with 15,000 bbl/day. Meanwhile, the petroleum industry in the Peninsular Malaysia started with the award for the first concession to develop offshore gas in 1968. In 1970s, the industry was boosted by the discovery of offshore fields in Peninsular Malaysia and Sabah (Kumar et al., 2020). The energy and power industry in Malaysia are driven by several policies including the Fifth Fuel Policy 2000, the National Biofuel Policy 2006, and the National Green Technology Policy 2009. In 2010, the New Energy Policy was published with five strategic pillars for sustainable development: (i) Energy pricing and strategic supply for

development, (ii) End-use energy efficiency, (iii) Energy governance and regulation, (iv) Management of change, and (v) Affordability.

1.2 MALAYSIA ENERGY DEMAND AND SUPPLY

Malaysia's energy landscape is complex and evolving, influenced by various factors such as economic growth, urbanisation, and an increasing population. As the country develops, the demand for energy has steadily risen, driven by expanding industries and higher living standards. This has led to notable changes in how energy is consumed across different sectors. Malaysia is rich in natural resources like oil, natural gas, and coal, which have traditionally powered its economy. Understanding the factors affecting energy demand, the patterns of consumption, and the resources available is crucial for shaping the future of energy in Malaysia.

1.2.1 Factors Affecting Energy Demand in Malaysia

Malaysia had shown remarkable economic development and population growth in the past years. According to the report published by Energy Commission of Malaysia (Suruhanjaya Tenaga, 2020), the gross domestic product (GDP) of Malaysia had increased from RM835,035 in 2010 to RM1,447,451 in 2018 as shown in Figure 1.1. It is apparent that the Peninsular Malaysia is the main contributor to the Malaysia GDP followed by Sarawak and Sabah. Many believe that the economic growth is one of the main factors contributing to the increasing of energy demand, however, it could also lead to a more efficient use of energy. Therefore, in most cases, the energy consumption is not linearly correlated to the economic development, although it has been proven by Ang (2008) that energy consumption in Malaysia is positively related to economic output in the long-run. Besides, the Malaysian economy subsidizing petroleum prices might be a catalyst to accelerate economic growth and at the same time encourage additional energy consumption.

Figure 1.1 Malaysia gross domestic product

Another main factor that influencing the energy demand is the population size. A study by York (2007) has proven that the population size has clear effects on energy consumption. As shown in Figure 1.2, Malaysians population had increased from 28.6 million in 2010, to 32.3 million in 2018. The figure shows that majority of Malaysian live in the Peninsular Malaysia, followed by Sabah and Sarawak. This factor explains the reason of main Malaysia GDP comes from the Peninsular. These two factors had been the major contribution towards the increment of energy consumption.

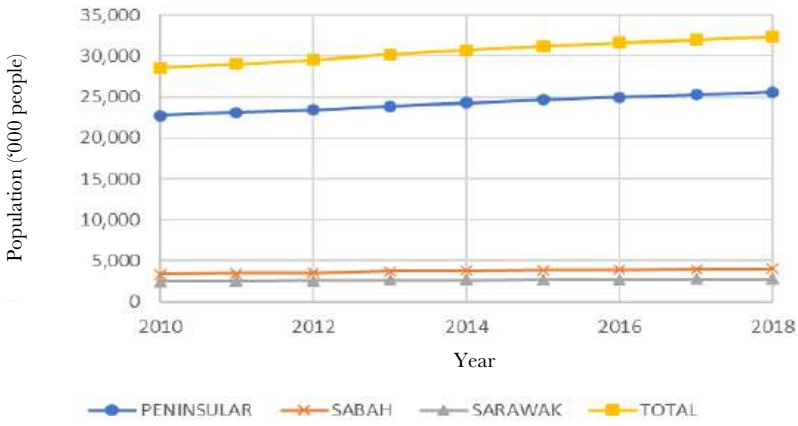

Figure 1.2 Malaysian population from 2010 until 2018