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## Article

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# Analyse the Importance of Energy in Malaysia's Economy and Diplomacy

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## ABSTRACT

Due to the infrastructures needed to handle the LNG cargo, it is expected that the global LNG market will remain concentrated to countries that operate the liquefaction and regassification facilities in their ports, therefore resulting in an equally low export diversification destination, in absence of sufficient intra-regional pipeline connection. The aim of this study is to what explains this situation, how it affects the supply-demand balance in the energy market and what can be done by Malaysia as an exporting country to further diversify the export destination to enhance the security of demand and its market access. Therefore, an optimal trade diversification model needs to be designed and developed to a mere handful of countries. This paper has been relied on primary and secondary data on qualitative approach through various official sources, interviews, observation and/or document analysis, published statistical data for the purposive sampling. The NVivo Qualitative Data Analysis Software (QDAS) has been used to facilitate the coding process and manage the coded data and organizing it into shared or similar themes across different documents. The paper shows the energy contributes significantly to Malaysia's economy and Malaysia is more dependent on its LNG export to Japan and South Korea than the other way around, and generally trades of energy commodities are based on practical consideration. This can be done by comparing the diversification and concentration rate of export destinations among LNG exporting countries to establish a baseline or normative practice among LNG exporting countries for the purpose of comparison. The rising global conscience for cleaner energy sources has resulted in the increased LNG production in countries which previously have adopted the pipeline technology for gas delivery method. Malaysia's LNG export destination have always been focused mainly on the East Asian countries, resulting in high export dependency.

**Keywords:** Trade Diversification, LNG, Energy Diplomacy, Energy Economy, Regional Co-Operation

**JEL Classifications:** O13, P48

## 1. INTRODUCTION

On June 17<sup>th</sup>, 1914, Winston Churchill proposed in the UK House of Commons to invest £2.2 million in the Anglo-Persian Oil Company (APOC), therefore acquiring 51% of the stock, as well as placing two directors in the company board. This in turn would secure a twenty-year contract on fuel oil, an attractive arrangement for the Royal Navy. Churchill further deliberated on the importance for "the Foreign Office, the Admiralty and the Indian government to preserve the independent British oil interests of the Persian oil-field" (Yergin, 1991): This might very well be

the earliest recorded instance of energy politics, and by extension energy security, as an object of foreign policy.

Within the context of Malaysia, the tryst with hydrocarbon resources in the country begins in 1910 with the discovery and commercial extraction of crude petroleum in Miri, in what was then part of the Kingdom of Sarawak. Since then, this discovery has forever changed the strategic importance and relevance of the region. This was best demonstrated by the invasion by the Japanese Imperial Forces in December 1941. They chose Miri as their landing point, with the aim to secure oil resources throughout

the island of Borneo, including those of Miri and Lutong in the Kingdom of Sarawak, Seria in the Sultanate of Brunei as well as Tarakan, Balikpapan and Banjarmasin in the Dutch East Indies (Gin, 2011). This invasion was regarded as the solution to the US-imposed oil embargo on Japan in August 1941 (Anderson, 1975; Nakagawa, 2010).

With the independence of the Federation of Malaya in 1957, it becomes necessary to formalise territorial claims and setting-up of maritime boundaries. In 1960, the Federation of Malaya acceded to the four treaties of the 1958 Geneva Conventions (United Nations, 1958c, 1958b, 1958a). Following the formation of Malaysia in 1963, it promulgated its own Continental Shelf Act in 1966, and made a proclamation of the extension of its territorial sea from 3 nm to 12 nm on August 2, 1969. In 1973, following the discovery of new oil reserves off the coast of Terengganu, Tun Abdul Rahman Yaakub, who was then the Chief Minister of Sarawak, mooted the idea to set up a national oil company which was modelled after Indonesia's Pertamina. This led to the formation of Malaysia's own national oil company, Petroliaam Nasional Berhad (Petronas) through the tabling and passing of the Petroleum Development Act 1974 in Parliament.

Since 1990, Malaysia has managed to secure and establish several forms of joint development areas with neighbouring countries to address and manage the issues of resource exploitation and maritime delimitation disputes between them. An agreement was signed with Thailand in May 1990, thus formally establishing the Malaysia-Thailand Joint Development Areas (MT-JDA). In June 1992, another agreement between Malaysia and Vietnam provided the outline for a Commercial Arrangement Area (PM3-CAA) (Forbes, 2003; Miyoshi, 1999). In 2015, an agreement outlining a Commercial Arrangement Area (CAA) was signed with Brunei after several years of negotiations, and this culminated in the signing of the Unitisation Framework Agreement (UFA) signed in November 2017 (Bernama, 2017b; Severino, 2010).

The formation of joint development areas is not the only form of energy diplomacy and cooperation undertaken by Malaysia. On 23<sup>rd</sup> August 2007, a memorandum of understanding (MoU) was signed in Singapore which marks the beginning of the ASEAN Power Grid (APG) Project. This was a continuation from the Agreement on ASEAN Energy Cooperation that was signed in June 1986. It calls for cooperation among member states to develop their energy resources for economic resilience. It is also an attempt to fulfil the ASEAN Vision 2020 as introduced in December 1997, which proposed the establishment of an electricity inter-connection arrangement within ASEAN.

Apart from the cooperation on the APG project, there is also another initiative, which calls for the construction of the Trans-ASEAN Gas Pipeline (TAGP). This initiative was agreed on through a MoU which was signed in Bali on 5<sup>th</sup> July 2002, during the 20<sup>th</sup> ASEAN Ministers in Energy Meeting (AMEM) (Association of Southeast Asian Nations, 2002). Like the APG, the TAGP aspires to establish a network of pipeline interconnections covering both mainland and maritime Southeast Asia. This pipeline network is significant for general regional energy security considering the amount of

available natural gas reserves in the region. There are several sources on the estimates of natural gas reserves in Southeast Asia ranging between 7.5 trillion cubic meters (tcm<sup>3</sup>) and 7.9 trillion cubic meters (BP, 2018, p. 26; Subhan, 2018). These estimates represent approximately 4% of global natural gas reserve, with Indonesia and Malaysia each respectively constituting 1.5% and 1.4% of the global reserves totalling at 193.5 tcm<sup>3</sup>. As for the rate of production, the Southeast Asian region collectively represents approximately 6.1% of the global natural gas production in 2017, producing 224.6 billion cubic meters (bcm<sup>3</sup>) of natural gas (BP, 2018).

This paper also seeks to act as a bridge between joint development and energy diplomacy. To some extent, the establishment of joint development may be perceived as a subset to energy diplomacy and this research aims at exploring and demonstrating this possibility. Whereas energy politics or pipeline politics are common themes of energy diplomacy, the prospect of the Joint Development Authority (JDA) as an instrument of energy diplomacy remains insufficiently explored (Sovacool, 2009; Visenescu, 2018; Zhao, 2008). Furthermore, current literature covering the topic of joint development areas tends to focus on the roles of JDAs in addressing disputes over maritime boundary delimitation instead of as a potential instrument for energy diplomacy (Becker-Weinberg, 2014; Miyoshi, 1999; Schofield, 2014). By presenting the establishment of joint development authorities as a viable method of confidence building and commercial cooperation between disputing states, the domain of energy diplomacy will therefore be expanded and further enriched.

It is important to emphasize on energy and its centrality in the workings of modern-day nation states. It lies at the intersection of the national economy and economic prosperity. However, as previously mentioned, energy resources are not distributed equally across the world, giving birth to the necessity of trade and to external dependency. Therefore, this needs to trade energy resources across state boundaries has led to the idea of energy diplomacy. Yet despite it being a common concept and an old practice, there has been no definitive, and generally accepted definition of energy diplomacy (Goldthau, 2010; Huda and Ali, 2017). This section seeks to address and highlight the attempts made by previous scholars and other publications to define and encapsulate the ideas behind energy diplomacy.

The idea of employing energy as a foreign policy instrument is not exactly new. Rather, it has been closely linked with foreign policy and military action. For example, the Abyssinia Crisis resulted in an oil embargo imposed by the League of Nations upon Italy after the country invaded Abyssinia in 1935 (Strang, 2008). On the other side of the globe, Imperial Japan's military adventurism in mainland China was used by the United States as a justification for an oil embargo in August 1941. This eventually led to the attack on Pearl Harbor in December 1941 (Nakagawa, 2010). Even during the war years, Allied Powers imposed oil sanctions upon Spain to limit its support for the Axis, and the Anglo-Soviet invasion of Iran took place in 1941 as an attempt to prevent oil access by the Third Reich (Caruana & Rockoff, 2006).

The goal of this paper is to study the conduct of Malaysia's regional energy diplomacy experiences and practices. Conducted from the perspective of neoliberal institutionalism, this research includes an examination of the strategies involved during the bilateral and multilateral negotiation stages undertaken through various regional institutions and the resulting policies, as well as the implications of said policies. It is essential for this study to be undertaken as Malaysia has been a net oil importer since 2014, thus making external dependencies and market stability of great importance for national energy security (Kok, 2015). This study proposes that regional energy diplomacy is one of the means available to Malaysia to attain energy security through negotiations and interdependence.

## 2. RESEARCH METHODOLOGY

### 2.1. Conceptual Framework in Malaysia's Energy Diplomacy

To understand the relationship between the method adopted and the research questions, it is important to outline the conceptual framework of this study. In the previous chapter, this study defined energy diplomacy as "activities which render energy as both the subject and/or object of foreign policies, either through bilateral or multilateral engagements with the stakeholders." This is a departure alternative definition which typically frames energy diplomacy as which typically perceive energy resources as an object of foreign policy (Goldthau, 2010; Uludag et al., 2013). As energy diplomacy is related to energy security, it also uses certain concepts which are common to the latter. These include the 4As of energy security, namely Availability, Accessibility, Affordability and Acceptability (Cherp and Jewell, 2014). Other scholars may frame it differently by simplifying the essence of the 4As into two elements, namely natural and human sources of risks for availability and accessibility, as well as the economic and environmental impacts of energy for affordability and acceptability (Winzer, 2012; Abidin et al., 2016).

Another element to consider is the role played by Malaysia in energy diplomacy, either as importer, exporter, transit state or negotiating member/partner. Depending on the energy resources being discussed, Malaysia may play different role, or a combination of multiple roles. In bilateral trade, in the regional LNG market, Malaysia is one of the largest exporters to the Republic of Korea and Japan, while at the same time, Malaysia imports most of its coal from Indonesia and refined petroleum from Singapore. On the other hand, Malaysia is simultaneously an importer, an exporter, a transit state, and a member in the plan to construct the ASEAN Power Grid. For the Malaysia-Thailand Joint Development Area, Malaysia is an equal negotiation partner with Thailand. All these examples show that Malaysia is balancing multiple roles in its energy diplomacy approach, as shown in the following Table 1.

In general, Malaysia's regional energy engagement can be divided into two main categories, namely those that are bilateral and those that are multilateral in nature. Applying the 4As framework of energy security to these engagements, we can understand the desired objectives based on the roles played by Malaysia. As an exporter, the priority for Malaysia is securing access to Japan's and

the South Korea's market, therefore making "Accessibility" of the 4As to be paramount. "Affordability" and "Acceptability" be the main variables as Malaysia decides to import energy commodities from Singapore and Indonesia, and such moves will not only affect the trade balance, but also the cost of energy (both financial and environmental) for Malaysian domestic consumers. As for the Malaysia-Thailand cooperation in the Joint Development Area, the main concern appears to be the "Accessibility" of the resources in the disputed region, to such an extent that both governments have agreed to set aside their differences about territorial claim and have compromises to mutually benefits from the arrangement.

### 2.2. Data Collection – Source Selection and Processing

In a common policy research, almost all sources of information generally consist of two types, namely documentations or records and people. The former includes both physical and digital publications such as books and journal articles, but also websites and statistical databases, government reports, archival materials, newspapers and magazines among other things whereas the latter includes anyone whether a single individual or groups of people who are consulted in person (Bardach, 2012). This realisation sets forth the design of this research as far as the data collection stage is concerned.

This paper relies on several forms of primary sources and documents. These include the parliamentary Hansard discussing among other things Malaysia's involvement in these regional energy cooperation's, initiatives or trade relations with other countries, related policy documents as well as the annually published Estimates of the Federal Government Revenue. The last is particularly important in obtaining the necessary data and information on the financial contributions and economic significance of hydrocarbon resources to Malaysia's economy, either through direct taxation, indirect taxation, or any other means. However, care must be taken in utilising data from this document. As it is an estimated figure, only data obtained from the previous year can be accurate. For example, in a document estimating the revenue for year 2018, the document itself will be published in 2017, but only data for year 2016 as included in the very same documents can be treated as final (Ministry of Finance Malaysia, 2017). Other forms of primary sources utilised are direct publications from the government bodies or parties involved, which include commemoration books by the MTJA, 11<sup>th</sup> Malaysia Plan mid-term Review by the Economic Planning Unit as well as statistical data from the Energy Commission (the Malaysia Energy Information Hub - MEIH) and the Department of Statistics, Malaysia.

Whereas the documentary sources represent a significant portion of this research, this work also incorporates other primary sources in the form of semi-structured interviews with relevant participants and parties. It is deemed desirable, not only to consult both documents and people, but even to consult them on an alternate basis, in which the period or gap between the interviews is utilised to peruse and examine the relevant documents or findings from the preceding interviews (Bardach, 2012). Using document analysis in tandem with interview methods enables the utilisation of the "responsive interviewing" technique which allows for



**Table 1: Selected regional energy engagements by Malaysia**

Activities		Role	Partner(s)	Energy commodities	Other main actors
Bilateral Arrangement	Export	Trading Partner	Japan, Republic of Korea	Liquefied Natural Gas	Petronas
	Import	Trading Partner	Singapore	Refined Petroleum	Petronas
	Malaysia-Thailand Joint Development Area	Equal Partner	Indonesia Thailand	Coal Crude Oil and Gas	TNB Malaysia Thailand Joint Authority, Carigali Hess Operating Company (CHOC)
Multilateral Arrangement	ASEAN Power Grid	Participating Member States	Brunei, Cambodia, Laos, Indonesia, Myanmar, Malaysia, Philippines, Singapore, Thailand, Vietnam	Electricity	Heads of ASEAN Power Utilities/Authorities (HAPUA)
		Importer	Thailand, Singapore		TNB
		Exporter	Thailand, Singapore, Indonesia, Brunei		TNB, SEB
	Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP) (Part of APG)	Participating Member State	Laos, Thailand, Singapore		TNB
		Importer State	Lao PDR		Thailand, TNB
		Transit State	Singapore		TNB

richer understanding of a particular policy (Owen, 2014). To this end, several interview sessions were held with officials from the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC), the Ministry of Economic Affairs (formerly known as the Economic Planning Unit- EPU) and the Malaysia-Thailand Joint Authority (MTJA), among others. The interview sessions with MESTECC and EPU were instrumental in obtaining insights on Malaysia's involvement in the ASEAN Power Grid initiative, whereas the interview session with MTJA provides invaluable information about the Malaysia-Thailand Joint Development Area (MT-JDA). All these interviews took place before the nationwide travel restrictions were put in place considering the ongoing pandemic.

In absence of access to information from primary sources, this research also utilizes data and other findings from selected secondary sources. These include prior publications by other scholars on the topic, particularly relating to the general theme of energy diplomacy, as well as other research with a more limited scope such as those pertaining to maritime delimitation disputes involving Malaysia or the establishment of other forms of joint development areas by other countries. Additionally, reports and statistical data published by a reputable and relevant third party such as the International Group of Liquefied Natural Gas Importer (GIIGNL) or the United Nations COMTRADE Database are useful in obtaining trade data involving energy commodities, their volume, value, trade direction and in certain instances, the signing of new supply contracts and the length of said supply contracts (GIIGNL - International Group of LNG Importers, 2013). Similarly, a database compiled by other scholars on United Nations General Assembly (UNGA) Voting Data was also utilised in this research as one of the indicators for foreign policy orientations (which plays an important role in international relations) or compatibility with its other trading partners, at least on global, multilateral issues. Essentially, the following Table 2 outlines the

examples of sources involved and methods utilised in answering the relevant research question.

As shown in Table 2, the documents are both derived from primary and secondary sources, whereas interviews are exclusively in the domain of primary sources. As there are no records of other interviews in prior research or publications done by other authors, none are listed. On the other hand, digital sources such as online and offline statistical database from reputable and authoritative sources are present as both primary and secondary sources, which not only serve as sources for information verification and triangulation, but also sources of additional information.

### 3. RESULTS AND DISCUSSIONS

#### 3.1. Current Scenario of Malaysia's Energy Sector

The formulation of Malaysia's first energy policy, the National Energy Policy 1979 (NEP 1979) was the immediate result of the cascading concurrence of all the events in the 1970s. The oil crisis of 1973 and 1979 and the discovery of oil reserve off the coast of Terengganu has prompted the government to act decisively by establishing a national oil corporation, Petronas in 1974 through the Petroleum Development Act 1974 (PDA 1974). There have been four main energy policies which have been introduced in Malaysia, namely the NEP 1979, the National Depletion Policy 1980 (NDP 1980), the Four-Fuel Diversification Policy 1981 (4FDP 1981) and the Five-Fuel Diversification Policy 2001 (5FDP 2001).

The NEP 1979 consists of three main objectives, namely the Supply Objective, the Utilization Objective, and the Environmental Objective. To this day, it remains as the backbone and the founding block of the national energy policy in Malaysia. It was subsequently complemented by the NDP 1980 which aimed at fulfilling the Supply Objective of the NEP 1979 by safeguarding

**Table 2: Selected Examples of Primary and Secondary Sources Utilised**

Research question	Primary sources	Secondary sources
Is energy a factor influencing Malaysia's economy and diplomacy?	<ul style="list-style-type: none"> <li>• Malaysia Energy Information Hub</li> <li>• Estimates of Federal Government Revenue</li> <li>• Department of Statistics Malaysia</li> <li>• 11<sup>th</sup> Malaysia Plan mid-term Review Handbook</li> <li>• Malaysia – Biennial Update Report to the United Nations Framework Convention on Climate Change</li> <li>• Interviews with MESTECC</li> <li>• Interview with MEA</li> </ul>	<ul style="list-style-type: none"> <li>• GIIGNL Statistics</li> <li>• UN Comtrade Database</li> <li>• UNGA Voting Data</li> </ul>
What are the driving factors behind Malaysia's decision to engage in regional energy cooperations?	<ul style="list-style-type: none"> <li>• Parliamentary Hansard</li> <li>• MTJA Commemoration Book</li> <li>• MoU between Malaysia and Thailand</li> <li>• Agreement between Malaysia and Thailand</li> <li>• ASEAN MoU on APG</li> <li>• Interview with MTJA</li> <li>• Interviews with MESTECC</li> <li>• Interview with MEA</li> </ul>	<ul style="list-style-type: none"> <li>• Newspaper articles</li> <li>• Journal articles</li> <li>• Books</li> </ul>
What is the significance of this cooperation to Malaysia's energy security and regional stability?	<ul style="list-style-type: none"> <li>• Parliamentary Hansard</li> <li>• MTJA Commemoration Book</li> <li>• Interview with MTJA</li> <li>• Interviews with MESTECC</li> <li>• Interview with MEA</li> </ul>	<ul style="list-style-type: none"> <li>• Newspaper articles</li> <li>• Journal articles</li> <li>• Books</li> </ul>

the depleting reserve and extending the life of domestic energy resources by limiting the crude oil production at 650,000 barrels per day (Jalal & Bodger, 2009; Ministry of Energy Green Technology and Water, 2011).

To further minimize the dependency on oil and ensure the security and reliability of the energy infrastructure, the Four Fuel Diversification Policy (4FDP 1981) was introduced by incorporating other fuel types such as natural gas, coal and hydroelectricity into the energy mix. Twenty years later in 2001, the Five-Fuel Diversification Policy (5FDP 2001) was introduced as to incorporate renewable energy options into the national energy and fuel mix (Sin et al., 2011). All these policies were formulated as a cautionary measure against the backdrop of a possible prolonged oil crisis while at the same time reducing the dependency on oil and exploring other fuel options for the national energy mix.

In January 2011, the Malaysia Nuclear Power Corporation (MNPC) was incorporated as the government considers nuclear energy as one of the potential options for electricity generation in Peninsula Malaysia. However, in late 2019 the government decided not to pursue the nuclear power option and therefore, the MNPC was shut down (Carvalho et al., 2019). Furthermore, the Renewable Energy Act 2011 (REA, 2011) and the Sustainable Energy Development Authority Act 2011 (SEDAA, 2011) both of which were passed and gazetted in 2011 also paved the way for the establishment of the Sustainable Energy Development Authority (SEDA) (Act 725 - Renewable Energy Act 2011, 2011, p. 9; Act 726 - Sustainable Energy Development Authority Act 2011, 2011, p. 7).

### 3.2. Energy in Malaysia's Economy and Diplomacy

Blessed with various hydrocarbon resources within its territory, Malaysia greatly benefits from the extraction of these resources. Therefore, the significance of the energy sector for the Malaysian economy cannot be discounted. Not only does it literally power

and enable the operations of various modern industries, but it is also a source of national revenue in the form of direct and indirect taxations, as well as providing various job opportunities within the sector itself. This consequently stimulates the economic growth of the local and surrounding areas, enhancing the economic outlook of the local population and eventually leads to the spill-over effect to national economy (Danlami et al., 2018). As for the diplomatic aspect of it, it manifests itself in two main ways. One of it is in the form of trade relations with other countries through the export of energy commodity surpluses and import of other energy commodities which are in short supply. Another dimension of diplomatic engagement in the energy sector lies in the cooperation with neighbour countries to share energy resources or create a regional vision of infrastructure development for mutual benefit. Just like the trade of energy commodities, these cooperations also have economic benefits and impacts, which will be discussed in the following subchapters (Dharfizi et al., 2020).

#### 3.2.1. Energy in Malaysia's domestic economy

Based on the annually published Estimates of Federal Government Revenue, revenue sourced from the energy sector represents a significant contribution to the national coffers. It is comprised of both the Tax Revenue and the Non-Tax Revenue. The former consists of direct tax (including the Petroleum Income Tax (PIT) and income taxes from various sources) and indirect taxes (export/import duties, sales tax, service tax and levies), whereas the latter includes revenue derived from licensing activities as well as dividends from investments, and joint exploration activities with other countries among other things. However, it is to be noted that due to changes in the document format, the inclusion of a certain data parameter is not always available. Details on the sum of indirect tax is unavailable for the years before 2000, whereas information on the non-tax revenue such as contributions from MTJA as well as the dividends from Petronas and/or TNB were not stated in the documents published before 2009. Therefore,

there exists an information gap within the presented data in this subchapter.

The Petroleum Income Tax is one of the largest singular component or sources of revenue through direct taxation. The method of collection and assessment for the Petroleum Income Tax is regulated through the Petroleum Income Tax Act 1967 (PITA 1967) which dictates that any “income from the winning of petroleum in Malaysia” is subject to such taxation in manners prescribed. It is also to be noted that based on this law, “petroleum” is defined as “any mineral oil or relative hydrocarbon and natural gas existing in its natural condition and casinghead petroleum spirit including bituminous shales and other stratified deposits from which oil can be extracted” (*Act 543 - Petroleum (Income Tax) Act 1967*, 1967, pp. 11, 15). Thus, it is not limited to crude petroleum, but also encompasses natural gas and other hydrocarbons.

Based on existing records, the value of the contribution from the PIT ranges from as low as MYR 2.185 billion (9.626%) in 1995, to as high as MYR 33.934 billion (29.019%) in 2012, it has represented anywhere from 7.683% (MYR 8.422 billion) of direct taxes in 2016 to 34.745% (MYR 27.231 billion) in 2009 in Figure 1. However, the revenue from PIT is subject to the rate of commercial production as well as the fluctuations of the global market and considering its non-renewable nature it is not a sustainable source of revenue in the long-term.

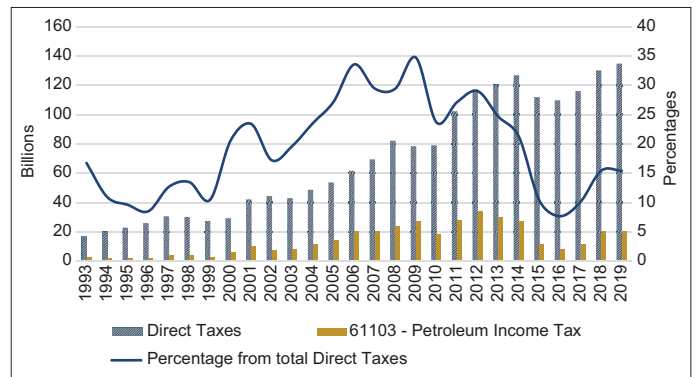
Apart from the direct taxes, indirect tax is another source of revenue from the energy sector. The indirect tax is comprised of export and import duties, as well as sales tax for raw petroleum and various forms of petroleum-based commodities such as kerosene, aviation fuel, liquid petroleum gas (LPG), diesel, petroleum derivatives and other fuel as well as petroleum products. However, despite its apparent wider inclusion of energy commodities, the overall revenue is rather low, amounting from MYR 786 million (3.412%) in 2002, to MYR 2.715 billion (9.652%) in 2009 in Figure 2.

### 3.3. Malaysia as Regional LNG Exporter

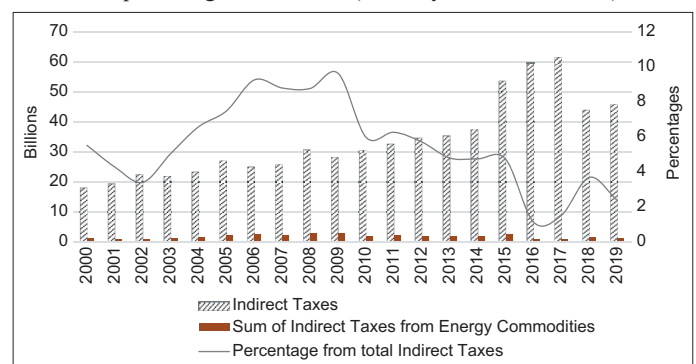
On its own, the 1.4% of global natural gas reserve held by Malaysia and the Asia-Pacific regional production share of 6.1% may not be of much significance. The natural gas reserve beneath the seabed only has potential value until after it is processed, refined, sold, and consumed by the end user. However, the Southeast Asian region compensates for what it was lacking in reserves through the production volume of its liquefied natural gas (LNG). In 2017, Brunei exported 9.1 bcm<sup>3</sup>, followed by Indonesia (21.7 bcm<sup>3</sup>) and Malaysia (36.1 bcm<sup>3</sup>). The production of these three countries represents 17.01% of global LNG export, supplying China, India, Japan, Republic of Korea, and Taiwan. Malaysia is only third in terms of LNG export volume, behind Qatar (103.4 bcm<sup>3</sup>) and Australia (75.9 bcm<sup>3</sup>) at 36.1 bcm<sup>3</sup> in 2017. This figure, however, still eclipses the movement of natural gas by pipeline in Southeast Asia, which recorded 19.5 bcm<sup>3</sup> of export by Indonesia (8.0 bcm<sup>3</sup>) and Myanmar (11.5 bcm<sup>3</sup>) (BP, 2018, p. 34).

At first glance, Figure 3 suggests that Malaysia is more dependent on Japanese import of its LNG products, compared to Japan's

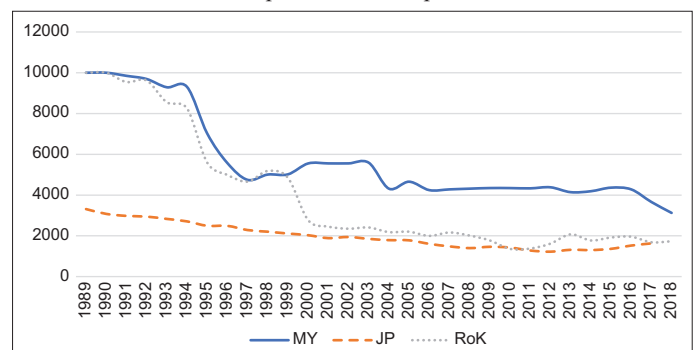
**Figure 1:** Petroleum income tax from direct taxes (MYR) and percentages 1993-2019 (Ministry of Finance, 2020)



**Figure 2:** Revenue from indirect taxes (MYR) of energy commodities and percentages 2000-2019 (Ministry of Finance, 2020)



**Figure 3:** LNG trade concentration – Malaysia export destination versus Japan and RoK import source



dependency on Malaysia's export. This is not surprising as in the earlier years, Malaysia was almost exclusively dependent on LNG import by Japan, maximizing the HHI value of 10,000 which translates to 100% of its LNG export destined for Japan. Only in 1995, Malaysia started to export to another destination, Taiwan, with an LNG cargo worth USD 67.5 million (United Nations Comtrade Database, 2019j). The situation is similar with the RoK, which is almost exclusively dependent on LNG import from Indonesia and the United States in 1989 and 1990, as well as Indonesia and Malaysia in 1991 and 1992. It was not until 1993, that RoK starts to diversify its import portfolio by adding Australia as another LNG import source (United Nations Comtrade Database, 2019l).

The lower rate of infrastructure dependency of LNG also provides some flexibility for the importing states to source their commodity from various other exporting states. The construction of regasification receiving terminals gives the LNG importer the option to make their purchase at spot market price from various suppliers in addition to the longer-term supply contracts, therefore enhancing their security of supply and access to this energy commodity (Pomfret, 2010; Islam et al., 2017). This leads to a higher level of import source diversification by the importing states, as exemplified in the previous Figures 2-4.

### 3.4. Petronas as an Agent of Malaysia's Energy Diplomacy

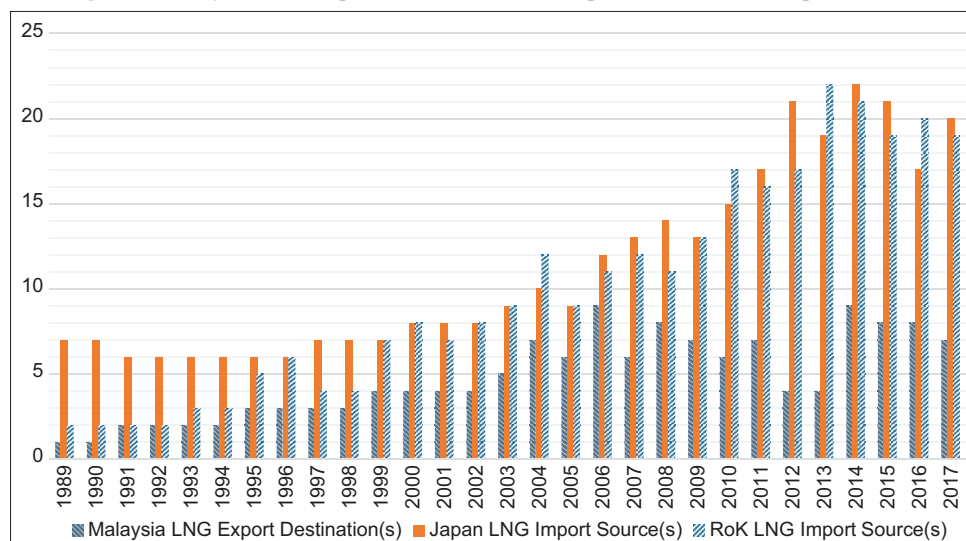
Apart from the direct contribution of the energy sector to the national coffer through taxation, the national oil corporation, Petronas also plays a prominent role in highlighting Malaysia's participation in the global energy market. Through the PDA 1974, Petronas is after all, the first contact point for any foreign companies or corporations who wish to participate in oil and gas ventures in Malaysia. Furthermore, apart from the obligations and mandates outlined in the PITA 1967 and PDA 1974, Petronas is granted with a high degree of autonomy and freedom in the energy sector, with little government interference. This enables Petronas to have a significant influence in Malaysia's global energy engagement, including an opportunity to play a proactive role in public energy diplomacy.

One of the more prominent examples is Petronas's sponsorship of the motorsport events, both locally and internationally, the most famous example being its involvement in the Formula One (F1) Grand Prix as one of the main sponsors for several teams. These include the Red Bull Sauber Ford team in 1995, Red Bull Sauber Petronas Team in 1997, BMW Sauber f1 team in 2005, and since 2010, the Mercedes GP Petronas F1 team (later renamed as Mercedes-AMG Petronas F1 team in 2012) (Petronas Canada, 2018). The last may arguably be the most profitable venture undertaken by Petronas considering that Mercedes-AMG team has been the overall champion for both the constructor and driver categories since 2014 (Petronas, 2021a). Whereas this

collaboration costs Petronas €30 million per season, the former Petronas group president and CEO, Wan Zulkiflee Wan Ariffin argued that Petronas continues to benefit from its involvement through global branding from its participation in F1 races including a reported earnings of USD 901.08 million in global media exposure for season 2015 (Adam Aziz, 2017; Motorsport Network, 2009). As a trickle-down effect from its involvement in F1, Petronas experienced extensive lubricant sales in Europe, and its lubricant arm, Petronas Lubricant International (PLI) became the world's number 10 in global market share as of April 2017. The hosting of F1 events in Malaysia, in which Petronas is also one of the main sponsors also helped promotes the country as a world-class sporting destination, and a global tourist destination, although reduced attendance and lowering of tv ratings for the event in Malaysia has resulted in the ending of its contract to host the F1 race after the 2018 season (Aman et al., 2018, p. 211).

Apart from its involvement in the sport industry, Petronas also has taken various other initiatives to project itself (and by association, Malaysia) as a responsible stakeholder in reducing overall carbon emission considering global concern over climate change (Islam and Ghani, 2018). One of such examples was the delivery of a carbon neutral LNG cargo to Shikoku Electric, Japan in August 2021 (Petronas, 2021b). Another example of public diplomacy role played by Petronas was its collaboration with Malaysia Airlines through the sustainable aviation fuel initiative. On 17<sup>th</sup> December 2021, flight MH 7979 departed from Amsterdam Schiphol Airport at 12:55pm local time and landed in Kuala Lumpur International Airport on 18<sup>th</sup> December 2021 at 9 am local time with 38% of the fuel used comprised of the sustainable aviation fuel blend. The initiative was another effort in lowering the carbon emission by the aviation sector, while at the same time, an opportunity for Petronas to diversify its production portfolio for Petronas. Furthermore, with Malaysia Airlines as the national flag carrier, this historic event helped reinforcing the positive image of Malaysia as a country which shares the sentiment over climate change and carbon emission seriously and is willing to do its part of reducing its overall carbon footprint.

**Figure 4:** Malaysia LNG Export Destination versus Japan and RoK LNG Import Sources





Petronas is also currently engaged in advocating the natural gas as an ideal “bridging” fuel during the transition process from the carbon-heavy energy sector based on coal and petroleum, to the cleaner renewable energy sources which are facing intermittency issue. At regional level, Petronas’ involvement is through the ASEAN Council on Petroleum (ASCOPE) gas advocacy taskforce which aspires for a common gas market in ASEAN and promoting a sustainable use of gas resources (Hicks, 2022). In November 2020, Petronas called for ASEAN governments, energy players as well as private and public sectors to collaborate on the energy transition, and create a sustainable future together, while acknowledging that the southeast Asian region is made of countries with different economic and social agendas, therefore making “affordability” of energy to be one of the core issue (Malaysia Investment Development Authority, 2020). Furthermore, Petronas was also the first oil and gas company in Asia that sets a net-zero carbon emission target by 2050, therefore positioning Petronas in the front-seat of the global decarbonization narrative. On its operational side, Petronas LNG operations in Canada is expected to benefit from the British Columbia hydropower grid and energy-efficient gas turbines, making it a low-emission LNG plant, and conducting a feasibility study for blue ammonia. Other bilateral cooperation’s involving Petronas with other foreign entities are those ExxonMobil and POSCO to explore the potential of carbon capture and storage projects in Malaysia and elsewhere, as well as a cooperation with Japan-based JERA to study green ammonia and hydrogen production. Whereas in Malaysia, its LNG terminal in Bintulu, Sarawak is also set to use the hydropower grid, saving an equivalent of 500,000 tonnes of CO<sub>2</sub> per year, and Petronas is currently engaged with Sarawak Energy to explore the potential for commercial production of green hydrogen and its value chain in Asia. All these indicates a conscious efforts by Petronas to venture into the renewable energy sector, therefore diversifying its business model (Hicks, 2022; Merolli, 2021).

#### 4. CONCLUSION

Malaysia is in a position where it is blessed with the abundance of energy resources and enjoys a state of energy security since its conception. However, situations are changing with increasing demands for energy, growing populations and depleting non-renewable resources, which necessitates engagement with other countries to maintain national growth and the existing quality of life. This needs for engagement with other countries, therefore, leads to the conceptualisation of energy diplomacy, in which energy is treated as both the object and subject of foreign policy, the central theme of this research. However, as Malaysia currently does not have a specific and explicit energy diplomacy strategy or policy, some form of refinement might be necessary to enable Malaysia to fulfil its fullest potential.

Despite being a major LNG exporter, Malaysia does not utilise its resources as a foreign policy instrument on its main customers, being Japan and the Republic of Korea. This is unlike the behaviours of Russia with its pipeline diplomacy, or OPEC with its sanction in the 1970s, in which energy commodities are being utilised to exert political pressure and gain favourable outcome to the benefit of exporting states. There are few reasons which

explains this situation. Malaysia being a relatively small country with limited political and economic reach prefers to maintain cordiality with its trade partners, and the lack of a clear and dedicated foreign energy diplomacy strategy by Malaysia itself. It is also shown that Malaysia is more dependent on its export of LNG to Japan and South Korea, instead of the other way around, considering the level of diversification between Malaysia’s export destination in comparison to potential import sources for Japan and the Republic of Korea. Other technical reasons involving LNG trades also dictate Malaysia’s relation with Japan and the Republic of Korea which makes the LNG trade purely economic. The research also shows the prominence of the energy sector in Malaysia’s economy, which is one of the main sources of taxation in addition to the revenues from foreign trades, and Malaysia’s engagement with the wider global community regarding the lowering of carbon emissions from energy use through various policy actions.

However, although Malaysia does not have a dedicated energy diplomacy policy or strategy, for now, Malaysia’s energy diplomacy practices have shown positive results, benefitting Malaysia through safe and peaceful commercial access to hydrocarbon resources in the MT-JDA, and cheap, clean electricity through the APG. Although MT-JDA is bilateral in nature, unlike APG which is multilateral, both scenarios show Malaysia’s energy diplomacy behaviour that is reliant on the existence of institutions, in abstract and concrete form, to peacefully pursue its national and strategic interests, as expected of a small, non-militaristic state. Malaysia’s involvement in energy diplomacy also includes the private sector, its national oil company Petronas in the MT-JDA and its main electric utility company, TNB in APG, and the roles they played on technical as well as operational aspect. One of the crowning achievements by Petronas in Malaysia’s energy diplomacy in the case of MT-JDA was convincing the Thailand government to adopt the PSC model for resource extraction, without forcing them to forfeit their prior commitment with other operators in the area.

For APG, Malaysia, together with Thailand, Laos and Singapore have taken a proactive measure in their LTMS-PIP pilot project. It signifies the first instance in the region where electricity was traded multilaterally, involving transit state(s). Prior to its commencement, grid interconnections and sales of electricity in the region are only on bilateral basis, but this initial success with LTMS-PIP will pave ways for enhanced energy network and market integration in the future, as envisioned in the 2007 APG Memorandum. However, Malaysia’s postponement and review of MESI 2.0 which should facilitates TPA in the electricity sector is one of the existing obstacles which need to be overcome (Bakar, 2021). Malaysia can further enhance its role and prominence in the APG initiative if it can successfully connect its three national grids which are currently separated between Peninsular Malaysia and its Borneo States of Sabah and Sarawak, although this will require further study and deliberations by those involved, which may include Indonesia depending on the route taken by the cable itself.

While this research focuses on Malaysia’s involvement in the MT-JDA and the APG initiatives, it does not cover other regional

energy cooperation's of which Malaysia is a part of. These include the Malaysia-Vietnam PM3 Commercial Arrangement Area (PM3-CAA) which was established through an MoU in 1992 and the Malaysia-Brunei Commercial Arrangement Area (CAA) which was established in 2017 through the signing of the Unitization Framework Agreement. This research also does not cover two multilateral regional energy initiatives, namely the Trans-ASEAN Gas Pipeline, and its coordinating agency, ASCOPE due to time and resource constraints, as well as the arrangement for the ASEAN Petroleum Security Agreement (APSA), which aims to create a regional petroleum stockpile for enhanced "petroleum security, either individually or collectively, and minimize exposure to an emergency situation, through the implementation of short, medium and long term measures" (Association of Southeast Asian Nations, 2009, p. 3). The suitability of the JDA arrangement for the current dispute between Malaysia and Indonesia involving the ND6 and ND7 blocks in the Celebes Sea is also another issue which was not included in this research. All these are possible avenue for future research, subject to the accessibility to the source materials.

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