

Unravelling Indonesia's Failure to Implement the ASEAN Petroleum Security Agreement (APSA)

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Abstract

In 1975, Indonesia initiated oil and gas cooperation, leading to the establishment of the ASEAN Council on Petroleum (ASCOPE) in 1976. Then, the ASEAN Petroleum Security Agreement (APSA) was created to improve petroleum security and minimise the impact of emergencies experienced by ASEAN Member States (AMS). The First APSA was signed in 1986 but did not succeed, so ASCOPE was tasked with conducting a review. This led to the signing of the Second APSA on 1 March 2009, which was then ratified by all AMS in 2013. As the initiator of the ASCOPE establishment and considering the status of Indonesia as the highest oil producer among AMS, even with its status as net oil importer, this research examines why Indonesia failed to implement the Second APSA even after it had been ratified for ten years. The research will gather primary data from official APSA documents and related agreements, as well as interviews. The secondary data are from official reports, presentations and studies about energy trends and development. The authors argue that non-compliance is the factor affecting the stagnation of the Second APSA in Indonesia. Therefore, before the expiration of the Second APSA in March 2023, AMS agreed to extend it on an interim basis for the next two years.

Keywords: APSA, ASEAN, emergencies, non-compliance, oil and gas

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Introduction

In our increasingly interconnected world, fuelled by technological advancements and globalisation, energy has emerged as a critical cornerstone of economic growth and global prosperity. Indeed, energy issues have evolved into a complex and far-reaching global geopolitical concern, significantly shaping the relationships between nations. Fossil fuels, including oil and natural gas, stand as strategic resources that exert considerable influence on the economic stability, political power and diplomatic engagements of numerous countries. The intricate relationship between energy and geopolitics has a long history, often leading to detrimental effects on the global economy, instigating conflicts between nations and even playing a decisive role in the outcomes of wars (Figueiredo et al. 2022). Recognising the multifaceted nature of energy challenges, there is a growing impetus for cooperation at both global and regional levels, exemplified by collaborative efforts among countries within Southeast Asia.

Under the framework of the Association of Southeast Asian Nations (ASEAN), energy stands as a paramount priority for regional cooperation in Southeast Asia. The groundwork for prioritising energy issues within the region was laid early, commencing with the inaugural ASEAN Economic Ministers on Energy Cooperation (AEMEC) meeting held in Bali, Indonesia, in September 1980. This foundational step culminated in a significant milestone when the Agreement on ASEAN Energy Cooperation (AAEC 1986) was signed by the ASEAN Member States (AMS) on 24 June 1986, which was subsequently ratified on 29 September of the same year. The ratification of the AAEC formally inaugurated the era of structured energy cooperation across Southeast Asia. This proactive and early endeavour accentuated the strategic importance that the AMS had long placed on collaborative energy initiatives for the region's collective advancement.

The escalating volatility of global oil markets in the mid-1980s underscored the urgency for AMS to collectively address energy security concerns. As a response to these challenges, ASEAN formulated the First ASEAN Petroleum Security Agreement (APSA) in 1986. This landmark agreement, an embodiment of the broader AAEC 1986, was designed to establish a cooperative framework for mitigating the impact of oil supply disruptions. AAEC 1986 Article VI on Cooperation in Security of Energy Supply mandates AMS to endeavour to cooperate in drawing up and concluding emergency agreements for different energy forms as may be desirable from time to time and to take appropriate measures to cope with these emergency situations (Secretariat 1986).

The shortcomings in the implementation of the First APSA prompted AMS to undertake a comprehensive review. This led to the development of the Second APSA ratified in 2013 which was valid for ten years up to 2023. Designed to bolster regional petroleum security, the agreement aimed to mitigate supply shortages and coordinate emergency responses on a voluntary, commercial basis. In this context, an oil emergency refers to a critical disruption in the petroleum supply chain resulting from events such as natural disasters (e.g. earthquakes or tsunamis), industrial accidents like facility explosions, or the outbreak of war. The Second APSA encompasses a range of short-, medium- and long-term strategies, which include diversifying alternative fuels and supply sources, exploring new petroleum resources, enhancing the efficiency of energy markets and energy utilisation. Nevertheless, the Second APSA also faced challenges in effective implementation, necessitating a two-year extension up to 2025 while a more comprehensive oil and gas cooperation agreement was formulated.

Given Indonesia's historical leadership in regional oil and gas cooperation initiative in 1975, which was the forerunner for the establishment of the ASEAN Council on Petroleum (ASCOPE) in 1976, which was then assigned to review the First APSA (Nicolas 2009), the research will focus on a case study of APSA implementation in Indonesia. Furthermore, based on the ASEAN Center for Energy (ACE) database, Indonesia dominated oil production from 2013 to 2022 with a total of 7,533MBOPD or approximately 43% of the total oil production in the Southeast Asian region (ASEAN Center for Energy 2023). This dominant position as the region's largest oil producer underlined its potential to serve as a linchpin in ASEAN's energy security.

Indonesia also ratified the APSA which has been extended twice – from 1986 to 2013 and from 2013 to 2023. However, despite ratifying the Second APSA, Indonesia encountered significant obstacles in transforming the agreement's provisions into concrete actions. This study seeks to uncover the underlying reasons for this implementation gap, considering the country's substantial role in the ASEAN energy landscape. Hence, this study raises the question of why Indonesia failed to implement the Second ASEAN Petroleum Security Agreement (APSA) even when it had been ratified for ten years.

This study delves into the factors that hindered Indonesia's implementation of the Second APSA despite its ratification a decade ago. By focusing on the 2013–2023 period, the research aims to provide novel insights into the challenges encountered during the agreement's lifespan. Academically, this research aims to significantly contribute to international relations, specifically the under-explored area of regional energy cooperation. It seeks to bridge a gap in the literature by thoroughly analysing factors influencing the effectiveness of regional energy cooperation regimes. Empirically, the findings will inform policymakers in Southeast Asia, enabling the development of more sustainable, inclusive and environmen-

tally responsive energy cooperation strategies. It will also offer targeted insights for navigating increasingly complex energy challenges.

For Indonesia, this study will clarify its strategic role in regional energy cooperation, particularly within the APSA framework. As the leading oil producer in Southeast Asia during the study period, despite being an importer, Indonesia's role is critical to the Second APSA's success. This research will identify factors affecting Indonesia's compliance and its broader impact on the agreement's implementation.

The Dynamics of the ASEAN energy issue

The existence of ASEAN as the only formal organisation in the field of economic cooperation in Asia is considered one of the unique characteristics of the South-east Asian region. Energy is viewed as an ideal area of cooperation in the region, so the AMS boost cooperation in sharing various resources and interconnection to increase resilience. When discussing the broader scope of energy cooperation, previous studies discussing energy issues within the ASEAN framework focus on four categories: energy transition, development of New Renewable Energy (NRE), the status of fossil energy and implementation of energy cooperation within the ASEAN framework.

First, energy transition is one of the initiatives in addressing the issue of climate change initiated by developed countries through the Paris Agreement. This global trend encouraged AMS leaders to carry out an energy transition by updating energy and climate policies through investment in new and clean energy infrastructure, as well as encouraging energy mainstreaming and democracy to strengthen energy security by increasing the use of renewable energy and reducing the dominance of fossil fuels (Heffron et al. 2024; Sony et al. 2024). In addition, it is necessary to accelerate decarbonisation efforts through major investments in green initiatives and to emphasise the urgency for widespread adoption of clean technologies. This includes using both fossil and non-fossil technologies for decarbonisation rather than waiting for certain technologies to mature, while still using a holistic approach based on the principles of sustainability, security, affordability, reliability, readiness and the country-specific impact reflected in technology ranking (Hu & Weng 2024; Lau et al. 2022). These steps are critical because the future energy landscape of ASEAN will rely on today's actions, policies and investments to change the fossil fuel-based energy system towards a cleaner energy system, while still considering potentially higher energy costs, affordability issues and energy security risks during the energy transition period (Phoumin, Kimura & Arima 2021).

Second, new renewable energy development in the Southeast Asia region is one of the strategies for transitioning the energy system towards cleaner energy. The Philippines, Indonesia, Malaysia, Thailand and Vietnam are blessed with

most types of renewable energy sources, even though almost all the renewable energy sources in the region are underutilised (Chien, Chau & Sadiq 2023; Vidinopoulos, Whale & Fuentes Hutfilter 2020). Thus, to maximise the potential and capacity of renewable energy available in the region, AMS leaders have implemented several policies, including encouraging individuals and industries to maximise use of renewable energy as a comprehensive substitute for fossil fuels in Southeast Asian countries (Erdiwansyah et al. 2019). Another measure to be taken for fossil fuel efficiency is through the promotion and adoption of more environmentally friendly alternative energy, especially renewable energy sources that exhibit a low or negligible carbon footprint. These findings offer significant contributions to policymakers in achieving sustainable energy, environmental stewardship, and the formulation and execution of comprehensive strategies that aim to mitigate carbon dioxide emissions arising from the consumption of AMS fossil fuels (Syed Ali et al. 2023). This condition provides confidence that the decarbonisation of the AMS energy system is very possible, but current policies and actions still need to be maximised to achieve any level of decarbonisation by 2050 (Vidinopoulos, Whale & Fuentes Hutfilter 2020).

Third, the status of fossil energy still dominates the energy system in the Southeast Asian region because AMS still rely on fossil fuels to meet its energy needs, especially when viewed from its total primary energy (Malahayati 2020). According to the 2015 Total Primary Energy Consumption (TPEC), renewable energy resources range from low to moderate, are unevenly distributed geographically and contribute to only 20% of TPEC. Meanwhile, fossil energies depending heavily on coal and oil contributed to 80% of TPEC (Lau et al. 2022). Despite the increasing installation capacity, renewable energies' contribution to TPEC has been decreasing in the last two decades (2002–2020). This suggests that the current rate of the addition of renewable energy capacity is inadequate to allow ASEAN to reach net zero by 2050. Therefore, fossil energies will continue to be an important part of ASEAN's energy mix (Lau et al. 2022).

Fossil energy is also considered strategic resources affecting economics, power, as well as the diplomatic relations of countries. Fossil fuels – especially oil and natural gas – are linked to geopolitics in the energy sector as it is concerned with the dwindling and geographically concentrated oil and gas deposits in nations with fragile political systems. Geopolitics and energy issues have long been intertwined, to the point where they could cause negative impacts on the global economy and even determine the outcome of wars (Figueiredo et al. 2022: 4). For example, a case study of oil price effect on economic growth from the three largest AMS oil exporters – namely, Brunei Darussalam, Malaysia and Vietnam – showed that oil prices do not significantly affect economic growth in Malaysia and Vietnam. Meanwhile, negative oil price shocks caused a significant impact on Brunei's economic growth. This suggests that oil price

still plays a significant role as the main driver of economic progress for Brunei (Kriskumar & Naseem 2019).

Lastly, the implementation of energy cooperation has been relatively disappointing so far, even within the ASEAN framework and despite the high level of ambition. Although cooperation is certainly easier and chances of success more substantial within ASEAN where the most important obstacles no longer prevail, the sheer scale of diversity and scope of diverging national interests have significantly impeded most efforts at coordination. In particular, the absence of a recognised common goal persists, making pledges such as joint strategic reserves and region-wide gas pipelines unfulfilled promises (Nicolas 2009: 34). For example, the TAGP project is still considered only the promotion of small, bilateral energy deals benefitting individual countries with the 'rhetoric of regionalism', but not its substance. This cooperation is considered a narrow way to acquire natural gas supply from neighbours, but not to promote a more holistic or productive form of regionalism (Sovacool 2009).

Existing research on the energy sector within the ASEAN framework still focus on AMS efforts in carrying out energy transitions, the development of renewable energy and its challenges, the status of fossil energy in the ASEAN energy mix and the implementation of energy cooperation within the ASEAN framework. While these studies provided valuable insight, there is still a notable research gap particularly in the oil and gas sector. Given the continued dominance of oil in the region's energy mix, cooperation in this sector is equally important to broader energy cooperation efforts. A comprehensive analysis of the Second APSA's implementation in Indonesia can shed light on its successes, challenges and potential improvements, ultimately contributing to a more effective implementation of future APSA.

Analytical framework

Common sense and rationality to cooperate bestowed upon mankind is considered a positive matter. The anarchic international system in this context could be subdued through institutions and regimes to facilitate international cooperation that can influence the system and overcome transactional costs. The international regime has a series of rules, norms, values and procedures that should be obeyed by actors so that the other actors' behaviours can be predicted. This is in line with Robert Keohane's view in *After Hegemony* which states that the international regime has four different components for making decisions: principles, norms, rules and procedures (Keohane 1984).

Compliance with the international regime is defined as an actor's behaviours that conforms to treaty provisions, the spirit and principles of the agreement, and international norms (Mitchell 1996: 5). Meanwhile, non-compliance means violating a given treaty rule (Mitchell 1996: 11) or a premeditated and deliberate

violation of a treaty obligation (Chayes & Chayes 1996: 9). Mitchell and Chayes both argue that non-compliance is caused by three factors.

First, non-compliance as preference happens when an actor may prefer non-compliance simply because the benefits of compliance simply do not outweigh its costs (Mitchell 1996: 11). The argument is complemented by Chayes from an international regime perspective stating that non-compliance occurs due to ambiguity and indeterminacy of treaty language (Chayes & Chayes 1996: 10). Second, both Mitchell and Chayes have similar arguments that non-compliance is also sourced from incapacity or called non-compliance due to incapacity (Mitchell 1996: 12) or limitations on the capacity of parties (Chayes & Chayes 1996: 13). This incapacity could be attributed to a lack of material resources, technical knowledge, an efficient bureaucratic system or financial support.

Third, aside from the two abovementioned factors, both scholars complement perspectives that non-compliance is also influenced by the inadvertence and temporal dimension of the social, economic and political changes contemplated by regulatory treaties. Non-compliance due to inadvertence is when an actor may take actions sincerely intended and expected to achieve compliance but fail to meet the treaty standards (Mitchell 1996: 13). Meanwhile, the temporal dimension happens when an actor needs considerable time to make significant changes mandated by regulatory treaties; hence treaties provide transitional arrangements and make allowances for special circumstances (Chayes & Chayes 1996: 15).

To analyse the sources of non-compliance identified by scholars, this research adopts the conceptual framework proposed by Ronald B. Mitchell. Mitchell's approach offers a more comprehensive perspective by focusing on the behaviours of actors within the international regime, rather than solely on the characteristics of the regime itself, as presented by Chayes. The focus on actor-level perspectives is particularly relevant for a case study in Indonesia, where the actions and motivations of domestic actors will significantly influence compliance. This allows for a more nuanced understanding of why a state might choose or fail to comply, even with a seemingly clear agreement.

While the APSA document could be analysed from a regime-centric perspective, focusing on factors such as ambiguity and uncertainty in its language, this research prioritises the actor-level perspective. Mitchell's three components of non-compliance, which will be discussed in detail, provide a valuable framework for understanding the factors that contribute to non-compliance in the Indonesian context. It will also allow for a deeper exploration of domestic factors, such as political will, bureaucratic processes, economic considerations and even the influence of domestic priorities and policies that might drive non-compliance.

Aside from all the aforementioned explanation, it is important to note that the concept from Chayes' model is not entirely disregarded. Chayes' concept, like ambiguity in the Second APSA's language, can certainly interact with Indonesia's

preferences and capacities in Mitchell's focus. However, Mitchell's framework provides a more direct lens through which to analyse the reasons behind Indonesia's actions or inactions. Hence, the three sources of noncompliance by Mitchell will be explained further as follows.

Non-compliance as preference means that the actor prefers not to comply as a choice, and then the actor's rationality plays the biggest part. The absence of law enforcement for the violation committed by an actor is the driver of non-compliance. Thus, international agreements with no normative force are unable to enforce the law or influence actors to comply. Non-compliance can also occur when the benefits of compliance simply do not outweigh its cost. Eventually, the actor chooses not to comply. Even in some cases, actors may consciously sign treaties only to garner the political benefits of membership and never intend to comply. Others may feel strong domestic and international pressures to sign an agreement, without considering the compliance risks and costs that should be taken. Thus, this condition influenced actors to believe that compliance did not serve the national interests. Moreover, actors may also view most but not all rules in a treaty as in their interests, leading them to sign with the intention of complying with most but not all of the rules (Mitchell 1996: 11–12, 2009: 184).

Non-compliance due to incapacity is usually encountered by developing countries due to a lack of necessary resources, including financial, administrative, technology and knowledge-based. For example, agreements that incur additional costs due to having to adopt certain technologies or the costs required to comply are not as large as the actor's ability to pay. Lack of administrative capacity will also affect compliance in implementing ratified agreements. In addition, cultural, social and historical aspects of existing local values can also hinder the adaptation of international rules (Mitchell 1996: 11–13, 2009: 184–185).

Non-compliance due to inadvertence is the failure of an actor to fulfil a compliance commitment in certain situations due to negligence. The actor may take actions sincerely intended and expected to achieve compliance but fail to meet the treaty standards. This problem is not restricted to developing countries as even developed countries may fail to achieve the intended results. Many policy strategies have inherently uncertain effects, particularly those that give targeted actors flexibility. A policy that performs well in one country may perform less well when duplicated in others. Innovative policies reflecting sound theoretical predictions may, in the messy world of implementation, face obstacles that reduce or eliminate any significant influence on an actor's behaviours (Mitchell 1996: 11–13, 2009: 185).

Unfavourable external factors may also hinder the achievement of targets and agreement periods in the international regime, such as unexpected economic booms, energy crises, global geopolitical turmoil, energy development trends and other external factors.

Research method

This article uses a qualitative research method with a deductive approach to the single case study. According to Neuman, qualitative research is a means of analysing and understanding events, group behaviours, facts or subjects to create a concept that will help in understanding social phenomena (Neuman 2014). The deductive approach of a single case study is carried out by collecting specific data comprehensively and connecting the dependent variable with various independent variables and hypotheses discussed in previous literature (Rosella & Spray 2012: 33). Thus, this study will use the independent variable of non-compliance consisting of three sources – namely, non-compliance as a preference, non-compliance due to incapacity and non-compliance due to inadvertence.

The data collection methods employed in this study include desk research and interviews aimed at gathering primary data on Indonesia's position, policy direction and perspective regarding the Second APSA implementation. This primary data was gathered through semi-structured interviews with several relevant government officials from the Directorate General of Oil and Gas (DGOG) and the Directorate General of New, Renewable Energy and Energy Conservation (DGNREEC) at the Indonesian Ministry of Energy and Mineral Resources. As the DGOG serves as the focal point for APSA implementation in Indonesia, their perspectives, spanning strategic direction to operational execution, are indispensable for a thorough analysis. At the same time, the DGNREEC is critical for understanding the potential shift in Indonesia's energy priorities towards renewable energy development and energy transition. Another resource person is from the National Energy Council (NEC), who advises the president on energy policy. The data collection was conducted for two months, from July to August 2024.

In addition, primary data on APSA principles and Indonesia's commitment at the global level are from official documents of the ASEAN Energy Cooperation Agreement, APSA documents, and related laws and regulations. Meanwhile, secondary data on energy sector development trends, energy system conditions and global energy sector trends are from government or related agency official report documents, online data searches, official presentation materials and other related studies or research. The primary and secondary data collected during the period 2013–2023 were processed using the triangulation method with narrative content analysis.

Non-compliance as preference: The absence of law enforcement and compliance did not serve the national interests

Asia's regional cooperation landscape is characterised by a complex network of formal Regional Organisations (ROs) and informal Regional Fora (RF). Unlike the other world regions, Asian regionalism has primarily emerged in a single, post-Cold War wave, leading to a proliferation of intergovernmental bodies as a high

number of regional cooperation agreements were created. This rapid growth has created a multifaceted and intricate institutional environment, with states often holding multiple memberships simultaneously. Such overlapping commitments contribute significantly to the complexity of Asian regional governance (Panke & Rüländ 2022).

Despite a delayed start, Asian states have rapidly embraced regional cooperation by becoming active participants in multiple regional agreements. Southeast Asian states, even as a sub-region, do not deviate from the broader trend of Asian countries in terms of the involvement in regional cooperation. This is exemplified by Southeast Asian regions such as Thailand, which, by 2015, was a member of no fewer than 17 such arrangements. Vietnam followed closely with 15 memberships, Cambodia, Laos and Myanmar each participated in 12 memberships, while Indonesia joined in 10 memberships. This surge in membership underscores the growing significance of regionalism in the Asian context. The surge in such arrangements across Asia, including Southeast Asian regions is primarily driven by a collective aspiration to address shared regional and transnational challenges more effectively at a regional level. These challenges, exacerbated by globalisation, necessitate collaborative solutions that transcend national boundaries, thereby propelling states towards regional cooperation as a strategic imperative (Panke & Rüländ 2022).

While regional cooperation in Southeast Asia has been motivated by a shared desire to address common challenges, the voluntary nature of many agreements can hinder the effective implementation of cooperative mechanisms. For example, the Second ASEAN Petroleum Security Agreement (APSA) lacks a binding enforcement mechanism as it is implemented based on a voluntary basis. The APSA was established to enhance petroleum security and mitigate the impact of emergencies through short-, medium- and long-term measures. However, the APSA's voluntary nature limits its ability to compel member states to comply with its provisions. This can be problematic, especially in cases where a member state faces a critical shortage of petroleum supplies and fails to take necessary actions to address the situation. The APSA defines an AMS in distress as one that has notified the ASCOPE Secretariat of a critical shortage caused by an emergency that threatens energy security. A critical shortage is characterised by a shortfall of at least ten percent (10%) of the normal domestic requirement for a continuous period of at least 30 days (Secretariat 2013: 4).

ASCOPE is a forum for oil and gas state-owned companies in Southeast Asia that was appointed as the chair of the APSA Task Force and Pertamina is Indonesia's representative participating in this forum. To support the operationalisation of APSA, the APSA Task Force has prepared the Coordinated Emergency Response Measures (CERM) as an implementation guidance. Based on CERM, all AMS are required to strive to provide oil to any AMS in distress with a total amount of ten

percent (10%) of the normal domestic requirement of the AMS experiencing an emergency. In addition, the assisting AMS may not gain unfair advantage, and the assistance provided under CERM must be voluntary (Secretariat 2013).

The voluntary framework of the APSA is considered the most appropriate mechanism for its implementation due to several factors. Firstly, not all ASEAN member states (AMS) possess the same capabilities in the oil sector, making it challenging to impose mandatory obligations. Secondly, Indonesia, despite being a major oil producer, cannot guarantee a consistent supply of oil to other AMS experiencing emergencies (Utomo 2024). This is partly because oil reserves in Indonesia are owned and managed by private entities, limiting government control over their distribution (Sularsih 2024). Finally, Indonesia prefers a voluntary framework because there are no specific national regulations governing oil aid to other countries, and the instability of national buffer reserves (Mahendra 2024). These factors collectively support the decision to maintain a voluntary approach for the APSA.

Despite its voluntary nature, the APSA framework does not guarantee that Indonesia will aid other ASEAN member states in distress. The agreement lacks binding obligations means that no country can be compelled to collaborate during emergencies. This limitation highlights the challenges of implementing effective regional cooperation mechanisms, even in the face of shared threats like energy security. The 'APSA prescribes that cooperation by each country will be conducted "on a commercial and voluntary basis," which lacks the compulsory power to force each country to collaborate in the event of an emergency' (Kobayashi & Anbumozhi 2015: 60). Thus, this loose provision limits the incentive for AMS to participate proactively in APSA activities. As long as ASEAN is still a non-binding organisation, based on consensus and there is no legal enforcement process, then AMS, including Indonesia in this context, will still have the freedom to carry out resolution strategies in the Southeast Asian region without worrying about criticism from other AMS (Thompson & Chong 2020).

Compliance with the provisions of the Second APSA is also unable to help Indonesia fulfil its national interests in ensuring domestic energy security. The concept of energy security has undergone a significant transformation over time. Initially, energy was primarily viewed as a strategic military commodity. However, the oil crises of 1973 and 1979 fundamentally shifted this perception. OPEC's oil embargo demonstrated the critical role of energy that is not just essential for military purposes, but also critical for global economic stability. This realisation led countries to recognise energy as a powerful political and economic tool, capable of influencing international relations (Ramadhani 2018).

Energy security issues began to be a major concern for AMS, particularly in tackling crises. Based on the five-year planning period for 2005–2010, the study found that AMS made little progress toward establishing energy security as the

progress regressed in some categories such as affordability, acceptance and availability so that the situation of ASEAN energy security became less stable than the period before (Tongsopit et al. 2016). The modern energy challenges faced by ASEAN demand a broader and more holistic notion of energy security that encompasses the importance of not only the sufficiency of fuel supply, but also local community development, macroeconomic and geopolitical stability, equity and affordability, and environmental sustainability. The crisis could occur not for purported lack of investment, but connected to a crisis of thinking and technology. Thus, the logic and values underpinning the concept of ASEAN energy security must be changed (Sovacool 2009).

Defining energy security is crucial for developing appropriate energy policies. Therefore, two main paradigms could be used to guide the policy formulation – namely, treating energy as a market commodity or viewing it as a strategic commodity. The market commodity approach emphasises competition, price liberalisation and the role of the private sector. On the other hand, the strategic commodity approach prioritises energy independence, national security and government control over energy resources. Understanding these paradigms is essential for developing effective energy policies that balance economic goals with strategic considerations (Keliat 2017).

In terms of Indonesia, energy security should be viewed not only as a market commodity but also as a strategic commodity. A market-commodity based approach to energy can promote efficiency and reduce government intervention, but it is essential to also consider broader energy security issues, particularly in the context of geopolitical factors (Ramadhani 2018). Practically, energy security in Indonesia is measured by using five scales: very resilient, resilient, less resilient, vulnerable and very vulnerable. The NEC has been measuring Indonesia's energy security since 2014 as 'less resilient', which went on to be 'resilient' in 2022 even though some indicators were still in 'less resilient' to 'vulnerable' condition (Sujatmiko 2024). However, Indonesia's energy security is considered to be very vulnerable when compared to other countries, including neighbouring countries in Southeast Asia. This is because Indonesia does not yet have a national reserve to be used at any time in the event of a crisis and critical conditions such as disasters or war (Umah 2020).

Energy security and innovation are intertwined, particularly in the context of sustainable development. While energy security ensures a reliable and affordable energy supply, energy innovation drives the transition to cleaner, more efficient energy sources, reducing the environmental impact and promoting economic growth (Ma, Feng & Chang 2025). Indonesia's rapid economic growth has earned it a place among the world's leading economies by the participation of Indonesia as a G20 member. However, despite its recognised achievements in innovation and industry, its advancements in materials science and technology often remain

understated. To address this, the Indonesian government has established a National Research Priorities framework, focusing on ten key areas including new and renewable energy. This strategic approach aims to strengthen Indonesia's research capabilities and drive innovation across various sectors, contributing to both energy security and sustainable development (Madsuha et al. 2021).

The World Energy Council has conducted a comprehensive assessment of energy system performance across 126 countries, including Indonesia. This evaluation, known as the energy trilemma index, considers three key dimensions: energy security, energy equity and environmental sustainability. The 2023 World Energy Trilemma Index revealed Indonesia's ranking to be 58th, significantly behind its regional counterparts Singapore (31), Malaysia (35), Brunei (45) and Vietnam (56) (World Energy Council 2024: 76–78). Consequently, domestic pressure has intensified to bolster energy security through the release of energy buffer reserves and the establishment of petroleum reserve facilities (stockpiling). According to the Ministry of Energy and Mineral Resources, the National Energy Council has recommended a national operational reserve for oil fuels (BBM) equivalent to 30 days of imports. However, the Downstream Oil and Gas Regulatory Agency (BPH Migas), citing International Energy Agency (IEA) data, suggested an ideal reserve of 90 days (Umah 2020). Indonesia's primary BBM producer, PT Pertamina (Persero), currently maintains an operational reserve of only 21 days of imports. This shortfall has been a subject of concern, with the Commission VII of the Indonesian House of Representatives urging Pertamina to increase its operational reserve beyond 21 days to align with international best practices (Perdana 2022).

To fulfil national interests in ensuring energy security, Indonesia has implemented Presidential Regulation Number 41 of 2016 concerning Procedures for Determining and Handling Energy Crises and/or Energy Emergencies. The regulation establishes the role and authority of government entities, including the president, ministers, National Energy Council (NEC), Regulatory Agency and governor, in developing strategies to mitigate such crises. One key strategy involves the release of Energy Buffer Reserves (*Cadangan Penyangga Energi*, CPE), a measure recommended by the NEC (Rahayu, Supriyadi & Yusgiantoro 2018). As defined by Law Number 30 of 2007 on Energy, CPE represents the quantity of energy sources and nationally stored energy required to meet national energy needs within a specified timeframe. It is one of three national energy reserves, alongside operational and strategic reserves (Kusdiana 2024; Utomo 2024).

In accordance with Government Regulation Number 79 of 2024 on National Energy Policy (KEN), the government is obligated to provide CPE as a reserve beyond operational reserves to address energy crises and national energy emergencies. The provision of CPE is dependent upon economic conditions and the state's financial capabilities (Sujatmiko 2024). However, within the context of the APSA, Indonesia currently lacks a mechanism for releasing CPE to AMS members

experiencing emergency conditions, as CPE regulations are primarily focused on domestic energy crises. To rectify this, the government is urged to promptly formulate legal regulations governing the arrangement and management of CPE, including necessary budget allocations. A draft Presidential Regulation on CPE is currently undergoing harmonisation to be submitted to the president (Sujatmiko 2024). Furthermore, it remains uncertain whether Indonesia will modify domestic regulations to align with APSA provisions (Utomo 2024).

The national interest in ensuring energy security can also be observed from the provision of stockpiling facilities to ensure the availability of fuel according to the required import days. From a business entity perspective, constructing stockpiling facilities aligns with the commercial aspect of the APSA framework. However, this endeavour requires careful consideration of appropriate mechanisms and business processes, as it demands substantial financing with uncertain economic benefits (Kusdiana 2024). For the government, while stockpiling facilities are crucial, their implementation is challenging due to their association with domestic energy security policies and budget allocations. Although Indonesia is actively developing oil and gas infrastructures, such as gas pipelines, oil refineries and LNG terminals, these efforts primarily focus on meeting domestic needs (Kusdiana 2024; Sularsih 2024).

Despite the significance of stockpiling facilities for energy security, domestic budgets are often prioritised for other programmes, including subsidies and compensation to ensure public access to energy (Kusdiana 2024). Consequently, Indonesia faces the challenge of maintaining domestic political will and securing funding for the development of oil stockpiling facilities. Acquiring new funding for oil reserves is particularly difficult because increasing financial support for stockpiling development means reducing domestic petroleum product subsidies. The financial burden imposed by the subsidy policy is a pressing issue that requires attention but is often politically sensitive to discuss. Therefore, finding alternative sources of funding for stockpiling facility development is not a simple task (Kobayashi & Anbumozhi 2015).

The absence of legal enforcement for non-compliance with the Second APSA, coupled with its voluntary and non-legally binding framework, indicates that Indonesia may not be optimally implementing the agreement. Furthermore, compliance with the Second APSA may not effectively contribute to Indonesia's national interest in ensuring domestic energy security through the release of CPE and the provision of stockpiling. Consequently, under these circumstances, Indonesia might prefer to avoid compliance with the APSA.

Non-compliance due to incapacity: Lack of necessary resources

The APSA defines a critical shortage as a situation where an AMS in distress is experiencing a shortfall of at least ten percent (10%) of its normal domestic re-

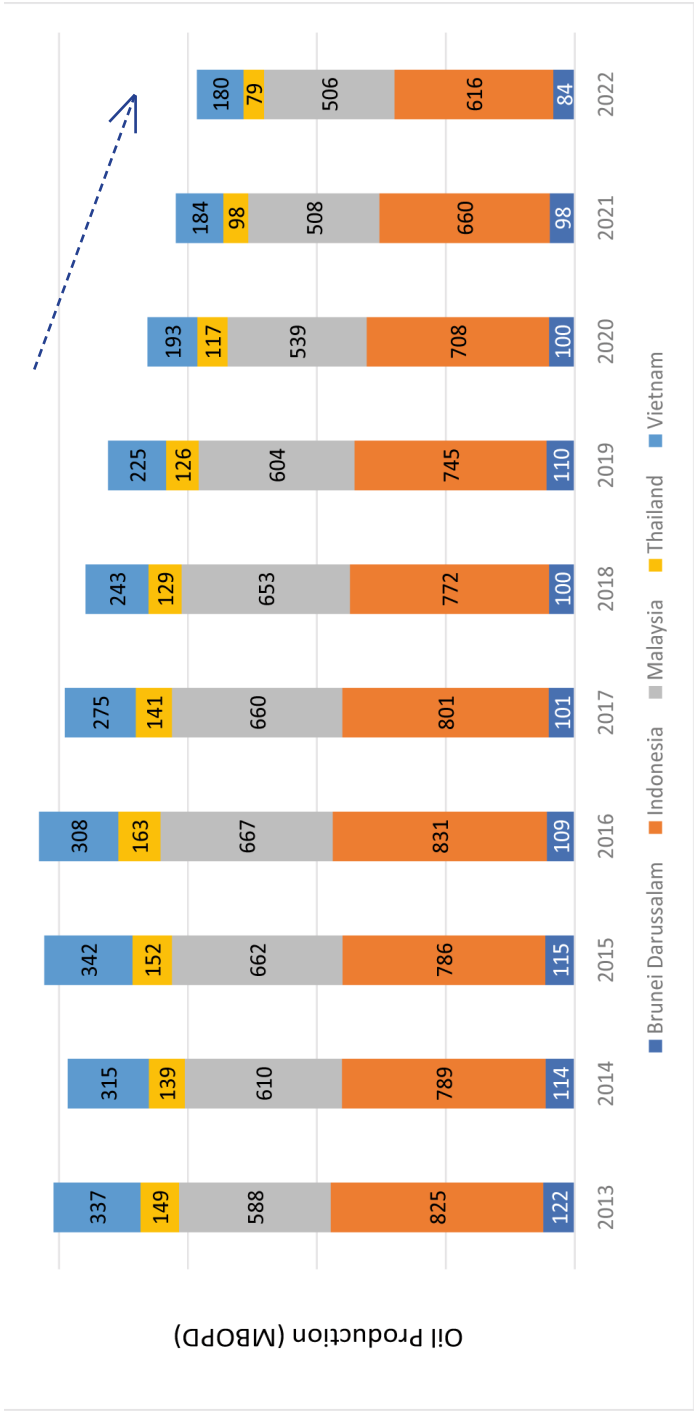
quirement for a continuous period of at least 30 days. Despite the APSA's expiration in 2023, no AMS reported such a critical shortage to the APSA Secretariat. However, to effectively and ideally implement the provisions of the Second APSA, oil production within the region should ideally exceed the domestic requirements and consumption of AMS. This surplus production could then be utilised to provide aid to other AMS facing emergency conditions, such as critical shortages or natural disasters (Kusdiana 2024).

Indonesia's economic growth in the late 20th century was significantly fuelled by the oil industry. Two major oil booms, triggered by geopolitical events in the Middle East, contributed substantially to the nation's economic prosperity. These booms led to increased foreign exchange earnings, attraction of foreign investment and very high oil production in the 1970s, which eventually propelled Indonesia's development. However, the country's reliance on oil has diminished over time. Despite the initial economic gains, a decline in exploration and investment in the oil sector, coupled with aging oil fields, has led to a continuous decrease in production since the 1990s. Consequently, to meet the rising domestic demand fuelled by continued economic growth, Indonesia had to import significant quantities of oil and fuel. This has resulted in Indonesia transitioning from a net oil exporter to a net importer in 2004, followed by Indonesia's withdrawal from OPEC membership in 2008.

Despite the declining oil production and the shift from net oil exporter to a net importer, the oil production in Southeast Asian regions was still dominated by Indonesia and Malaysia, both of which contributed 76% of total ASEAN production in 2022 (ASEAN Center for Energy 2023: 7). Between 2013 and 2022, Indonesia maintained its position as the leading petroleum producer in the ASEAN region, accounting for approximately 43% of the total oil production (ASEAN Center for Energy 2023: 7). However, from 2016 to 2022 AMS oil production experienced a decline of nearly 30%, or an average of 5.7% per year, including Indonesia's oil production as illustrated in Figure 1.

Even though Indonesia's oil production dominates among the AMS, based on the data processed from the Handbook of Energy & Economic Statistics of Indonesia 2023, Indonesia's oil production between 2013 and 2023 experienced a downward trend. In 2023, the production was recorded at 221 million barrels, which was lower than the production in 2013 of 301 million barrels. Meanwhile, the total final energy consumption of oil fuels in 2023 was recorded at 263 million barrels, exceeding the production. Indonesia's oil production and consumption trend throughout these last ten years showed an imbalance trend. Likewise, imports and exports followed a similar trend, showing that the number of imports were higher than the exports. For example, crude oil imports in 2023 amounted to 132.4 million barrels or 26% higher than the previous year as described in Table 1 (Kementerian Energi dan Sumber Daya Mineral 2024).

Figure 1: Oil and Gas Production Trend of AMS 2013–2022



Source: Based on data from ASEAN Oil and Gas Update 2023

Table 1: Oil Production, Export, Import and Final Energy Consumption of Oil Fuels between 2013 and 2023

Year	Production	Export	Import	Consumption
2013	300,830	104,791	118,334	378,049
2014	287,902	93,080	121,993	363,713
2015	286,814	115,063	136,666	323,331
2016	303,336	125,541	148,361	329,094
2017	292,374	102,723	141,616	331,454
2018	281,780	74,472	126,082	320,730
2019	272,025	25,971	89,315	261,971
2020	259,247	31,448	79,685	222,339
2021	240,367	43,769	104,403	235,941
2022	223,532	15,494	104,722	262,987
2023	221,089	21,396	132,386	263,690

Source: Based on data from Handbook of Energy & Economic Statistics of Indonesia 2023, Ministry of Energy and Mineral Resources

The ongoing conflict between Russia and Ukraine has had a detrimental impact on the global economy, including a significant crisis in the energy sector. Several AMS experienced disruptions to the global oil supply chain, leading to fuel shortages in countries like Myanmar and Laos. These oil and gas challenges were primarily addressed bilaterally with non-AMS producers and international traders (Nicolas 2009: 26). For example, when Myanmar faced a fuel shortage due to the military coup in 2021, Indonesia was unable to provide assistance. Drivers in the city of Yangon, with a population of 8 million, endured long queues to obtain scarce fuel (Iswara 2023). Similarly, Laos experienced a fuel supply crisis in 2022, but instead of seeking help from Indonesia, it opted to purchase gasoline from Russia, which was 70% cheaper than oil supplies from other countries (Luc 2022).

In 2022, Indonesia's oil production reached 616 BPD and 5,531 MMSCFD, respectively equivalent to 87.3% and 95.3% of the set targets. The significant decline in oil production compared to 2021 (by almost 7%) indicates upstream challenges such as unplanned shutdowns, operational delays and unexpected production declines (ASEAN Center for Energy 2023: 8). In response, Indonesia implemented oil and gas fiscal reforms since 2021, including an agreement on a 10% shareable First Tranche Petroleum (FTP), setting the Domestic Market Obligation (DMO) price at 100% of the Indonesian Crude Oil Price (ICP), and introducing new release requirements (ASEAN Center for Energy 2023: 8). However, these reforms have been insufficient in restoring the stability of oil production in Indonesia, as the overall trend has been downward for the past ten years.

The limited petroleum resources owned by Indonesia to meet the provisions of the Second APSA are also evident in the trade balance deficit, which reached 13 million tons in 2022. This figure represents a 96% increase compared to the average of the previous 5 years (6.6 million tons). This deficit aligns with the

ASEAN crude oil trade balance deficit, which rose from 103 million tons in 2021 to 125 million tons in 2022, a 21% (ASEAN Center for Energy 2023: 12). As demand surges due to economic recovery while domestic production continues to decline, none of the AMS are oil exporters. In fact, in 2022, Indonesia experienced an 11% increase in import dependence. With limited oil production in ASEAN, 93% of crude oil imports come from outside the region, including Indonesia, most of whose oil imports originate from non-AMS.

The lack of sufficient oil resources in Indonesia may hinder its optimal implementation of the Second APSA. This is evident in the decline in Indonesia's crude oil production by almost 7% in 2022, the substantial increase of 96% in the crude oil trade deficit compared to the average of the previous five years and the growing dependence on oil imports by 11%, primarily from non-AMS sources.

Non-Compliance due to inadvertence: Certain situations of inadvertence

Indonesia's non-compliance with the provisions of the Second APSA can be attributed to inadvertence of certain situations, such as the new priority towards energy transition and also the geopolitical situations. Climate change has emerged as a powerful catalyst for energy transitions. The increasing severity and frequency of extreme weather events, rising sea levels and other climate-related impacts create a compelling urgency to move away from fossil fuel-based energy systems towards cleaner, more sustainable alternatives. ASEAN was relatively late in addressing climate change compared to other international organisations. Initially absent from ASEAN's agenda, climate change was formally introduced into the discussions through the Jakarta Declaration in 1997. Since then, ASEAN has consistently issued declarations and statements related to climate change, demonstrating its commitment to addressing this global challenge (Pramudianto 2016).

The affordability of coal has made it a compelling energy source for Southeast Asia's developing economies, including Indonesia, which is experiencing rapid growth and energy shortages. This situation has driven a significant expansion of coal-fired power plants (CFPPs) in the region, particularly Indonesia. The ambitious plans to substantially increase coal power capacity by adding 117 CFPPs will lock the country into a heavily carbon-intensive energy mix for decades to come, exacerbating its status as a major global greenhouse gas emitter (Rüland 2023: 1277). This development poses a significant challenge for Indonesia's efforts to transition towards a more sustainable energy future, as it may hinder the country's ability to reduce its carbon footprint and meet its climate change commitments.

Therefore, to solidify its commitment to global climate action, Indonesia submitted the Intended Nationally Determined Contribution (INDC) to reduce greenhouse gas emissions by 29% by 2030 during the Conference of the Parties/COP-21 in 2015 and subsequently ratified the Paris Agreement in 2016. This inter-

national agreement aims to limit global warming to well below 2 degrees Celsius above pre-industrial levels and pursue efforts to limit it to 1.5 degrees Celsius. This marked a pivotal step for Indonesia, which is grappling with rapid development while still contributing significantly to a global effort to combat climate change through greenhouse gas emissions reduction. As a middle power, Indonesia also played a significant role at the 2018 COP-24 climate summit by advocating for the needs of developing countries. Indonesia sought to create a supportive environment to address climate change challenges. Despite challenges in securing commitments for technology transfer and capacity building, Indonesia successfully articulated its key negotiation points and made progress in obtaining financial support from developed countries (Pratama & Karim 2023).

Then, through its enhanced Nationally Determined Contribution (e-NDC), Indonesia intensified efforts to reduce greenhouse gas emissions by 32% by 2030. The energy sector is at the forefront of these mitigation strategies, with a target of reducing emissions by 358 million tons of CO₂ equivalent. Recognising the rapid pace of climate action, Indonesia is also currently formulating an even more ambitious second NDC to guide the energy transition efforts beyond 2030. This framework underscores Indonesia's determination to transition towards a low-carbon economy and position the energy sector as a foundation of this transformation. Some of the key initiatives include the transition to renewable energy sources, energy efficiency improvements, clean energy generation, the adoption of low-carbon fuels and post-mining reclamation (Dewi 2024).

The sustainable development of developing countries, including Indonesia, is positively affected by renewable energy usage. Indonesia has a large, widespread and diverse NRE potential in total of 3,687 GW in 2023, consisting of solar energy potential as the highest for 3,294 GW, followed by wind and hydro for 155 GW and 95 GW respectively. Despite the enormous solar energy potential, the adoption level remains low as shown in Table 2.

Table 2: Indonesia's Renewable Energy Potential in 2023

Energy	Potential (GW)	Utilization (MW)
Solar	3,294	315
Hydro	95	6,696
Bioenergy	57	3,104
Wind	155	154
Geothermal	23	2,370
Ocean	63	0
Coal Gas.	–	30
Total	3,687	12,669

Source: Based on Directorate General of New, Renewable Energy and Energy Conservation, Ministry of Energy and Mineral Resources 2023

The adoption of renewable energy technologies, such as solar panels, align with the circular supply chain concept that acknowledges the challenges of future resource scarcity. A circular supply chain minimises waste, thereby supporting the seventh sustainable development goal in ensuring access to affordable, reliable, sustainable and modern energy for all. By reducing waste production and promoting self-sustaining production systems, a circular supply chain supports sustainable development (Bekti et al. 2021). Solar energy plays a pivotal role in the ongoing energy transition. With its rapid construction timelines, decreasing development costs and widespread geographical potential, solar power presents a compelling solution for diversifying energy sources and reducing reliance on fossil fuels. Therefore, Indonesia persists in implementing solar PV projects as outlined in the Electricity Business Plan, promoting solar PV rooftop installations and extending solar energy access to remote areas (Dewi 2024).

Indonesia has also formulated a comprehensive energy transition roadmap to achieve Net Zero Emissions (NZE) by 2060 or earlier. This collaborative effort, involving both the government and stakeholders, aligns with global climate mitigation strategies. The roadmap adopts a dual approach: supply-side and demand-side (Dewi 2024). The supply side includes the massive development of new renewable energy; reducing the use of fossil fuels in power plants (dedieselisation programme, phasing out fossil fuel power plants); utilisation of low-emission technology (Carbon Capture and Storage (CCS)/ Carbon Capture, Utilization and Storage (CCUS)); development of smart grids; energy storage; and hydrogen production technology. Meanwhile, the demand side includes the use of electric vehicles; the development of induction stoves; the development of household gas networks; utilisation of biofuels; and the implementation of energy management and of minimum energy performance standards for equipment (Dewi 2024).

Indonesia's archipelagic geography presents a unique opportunity to harness widespread renewable energy (RE) resources through a modern, integrated super grid and smart grid. This advanced infrastructure seeks to optimise the distribution of renewable energy by enhancing electricity system connectivity, bridging the gap between renewable energy generation sites and high-demand centres, and mitigating the challenges posed by the intermittent nature of variable renewable energy sources (Dewi 2024).

This robust infrastructure is essential for establishing a resilient and efficient energy system. While connectivity has been a catalyst for Southeast Asia's economic growth, infrastructure modernisation often overlooks environmental sustainability. The neglect of environmental sustainability in energy infrastructure projects is closely associated with the practice of kick-starting development through persistently high rates of economic growth measured in GDP. Building infrastructure and guaranteeing energy supplies are considered essential

to accomplish this goal, so other development aims, such as environmental sustainability, are given less importance. Hence, to truly achieve sustainability, infrastructure projects must adhere to international best practices, ensuring they meet present needs without compromising future generations' ability to do the same (Rüland 2023: 1270, 1278).

As Indonesia's representative in ASCOPE, Pertamina is at the forefront of the nation's energy transition, pursuing green and sustainable energy. The company's strategic focus is articulated through eight key pillars: green refinery, bioenergy, geothermal energy, hydrogen, gasification, electric vehicle battery and energy storage system (ESS), new renewable energy and circular carbon economy. Aligned with the government's decarbonisation goals, Pertamina also supports the government's efforts in reducing greenhouse gas (GHG) emissions by abating the emissions from its operations through utilising gas flares and Project Blue Sky, which aims to urge people to use low-carbon fuels (ASEAN Center for Energy 2023: 32).

The Acting Director General of Oil and Gas, Dadan Kusdiana, emphasised that Indonesia's prioritisation of energy transition towards renewable energy will not undermine its commitment to developing fossil energy resources. The government is actively formulating policies and incentives for both upstream and downstream sectors to accelerate oil potential production and reduce reliance on imported oil. Despite the shift towards renewable energy, the energy demand will initially continue to rely on fossil fuels, while simultaneously accelerating the transition towards cleaner alternatives, particularly to meet the growing demand for electric vehicles. Ultimately, the successful transition to renewable energy will strengthen fossil energy security as the decreasing consumption will maintain the existing supply. Moreover, energy diversification through renewable energy development is a long-term measure under the APSA, ensuring that both fossil and renewable energy sources complement each other (Kusdiana 2024).

As also highlighted by the director general of New, Renewable Energy and Energy Conservation, Eniya Lestiani Dewi, energy security should transcend the energy transition. Immediate replacement of fossil fuels with renewable energy sources is challenging due to the substantial time required to develop the necessary infrastructures. Despite the gradual decline in fossil fuel investments, the transition to renewable energy must occur concurrently with the development of these resources. Therefore, existing fossil energy plants should be integrated with renewables such as solar, hydro, geothermal energy or even gas. Unless this transition is accelerated, Indonesia may struggle to achieve the target of 23% renewable energy mix and the target of green RUPTL (Electricity Supply Business Plan). Transition does not mean eliminating fossil fuels entirely, but gradually transforming towards low carbon, clean carbon, then eventually free carbon (Dewi 2024).

Indeed, oil and gas still dominate the energy supply mix, but the demand is expected to decline nominally in line with the high ambitions of the AMS in renewable energy and energy efficiency towards 2050. Based on the baseline scenario, oil and gas demand based on the ASEAN Plan of Action for Energy Cooperation (APAEC) target scenario will decline by 63% and 48% respectively by 2050. The main causes of the decline are electrification in the transportation sector and declining energy consumption due to increased implementation of energy efficiency (ASEAN Center for Energy 2023: 37). In the end, the condition will potentially remain as the factor slowing down the implementation of the Second APSA as Indonesia's focus will be split between carrying out the transition process from fossil to renewable energy, accelerating the development of renewable energy, while at the same time ensuring the sustainability of fossil energy development across the expanse of time.

Other situations causing Indonesia to be suboptimal in implementing the Second APSA are the geopolitical situation, which, since the COVID-19 pandemic, has been accompanied by economic activity recovery that triggered oil price increase and the expansion of gas price distribution among regions, as well as geopolitical tensions. Since the outbreak of the COVID-19 pandemic in 2020, many countries have adopted restrictive measures to prevent the spread of the virus, which has led to the stagnation of many industries and a decrease in the demand and consumption of fossil fuels. Global fossil fuel demand fell by 6% in 2020, with the United States (US) and the European Union (EU) reporting the largest falls of 9% and 11%, respectively (Tang & Aruga 2021). This was in line with the decreasing AMS oil consumption during the COVID-19 pandemic. The reduction in the consumption of fossil fuels is likely to have adverse impacts on fossil fuel prices, exemplified by the record low price of US West Texas Intermediate crude oil. It was suggested that the pandemic had a significant impact on the stability of the financial markets (Tang & Aruga 2021).

Ever since the outbreak of the Russia-Ukraine War in 2022, its consequent chain of events has adversely impacted the global economy through several channels, such as the commodity market, stock market and trade. Notably, the energy market has been hit the hardest. Given the strategic importance of crude oil and the formation mechanism of prices in a seller's market, it is apparent that oil prices are highly susceptible to extreme events, particularly geopolitical conflicts in major oil-producing nations. Energy security is challenged. The short-term and long-term impacts of extreme events on the energy market have become apparent. The Russia-Ukraine War may increase oil prices by over 50%, reflecting the significant instability of oil prices. Therefore, countries and organisations should collaborate to establish an efficient emergency management mechanism within the oil market to stabilise supply and decrease sharp fluctuations in oil prices (Zhang et al. 2024: 10–11).

Crude oil prices generally rose quite rapidly across different benchmarks, averaging more than USD 90 per barrel in the first half of 2022 compared to USD 69 per barrel in 2021. This large increase hit import-dependent AMS hard as the regional demand remained strong due to sustained industrial growth and urbanisation (ASEAN Center for Energy 2023: 19). In addition to the relatively low global oil stockpile due to rapid storage withdrawal for fuelling the recovering economy, the full-blown conflict in Eastern Europe forced some European countries to find new sources of oil imports, sparking a global oil supply crunch and hence skyrocketing oil prices. Natural gas prices also increased in 2022, driven mainly by global political tensions that disrupted the supply. The economic impact of the natural gas price surge on AMS was cushioned by several factors, including low exposure to the LNG spot market, heavily regulated domestic natural gas market and available substitutes for natural gas in the power sector (ASEAN Center for Energy 2023: 19).

This geopolitical situation has had a significant impact on Indonesia, affecting its domestic energy security and the national economy. In response to geopolitical crises, fiscal policy is often prioritised to secure the domestic energy sector, limiting the ability to assist AMS countries facing emergency conditions. This financial instrument is required to alleviate the risk of high production costs caused by fluctuating raw material prices, manage oil price shocks and ensure safe and effective operations. Extreme events can easily exacerbate the volatility of oil prices, leading to overreactions. To mitigate such risks, Indonesia should strive to diversify their oil and gas import sources. As demonstrated by the European countries' over-reliance on Russian energy imports during the Russia-Ukraine War, a single-source dependency can lead to an energy supply crisis. To address this, energy-importing countries must engage in multi-level cooperation with various nations and gradually establish an energy cooperation network while diversifying their oil and gas import patterns (Zhang et al. 2024).

Indonesia's energy sector faces significant challenges due to the uncertainty of global oil and gas supplies and fluctuating prices. To mitigate these risks and avoid broader economic impacts, Indonesia has implemented a range of short-term and long-term strategies in both upstream and downstream sectors. These strategies include providing incentives for investment, ensuring a stable oil supply, and implementing policy changes and tariff adjustments, such as tax deductions and subsidies for commodities, which significantly affect communities (Mahendra 2024). The surge in crude oil prices in January 2022, for example, led to a 340% year-on-year increase in Indonesia's energy subsidies, highlighting the substantial financial burden imposed by volatile oil prices (ASEAN Center for Energy 2023: 25).

Given the current context, Indonesia may not be optimally implementing the Second APSA due to the shifting priorities towards renewable energy and

the impact of geopolitical crises on domestic policy focus. These factors have contributed to Indonesia's non-compliance with the provisions of the Second APSA.

Conclusions

Indonesia's pivotal role in the Southeast Asian region's petroleum security is undeniable. As the largest petroleum producer among AMS for the past decade, Indonesia has a unique opportunity to spearhead regional resilience. The Second APSA was designed to enhance both individual and collective petroleum security among AMS, but its implementation in Indonesia remains at the level of agreement and documents. Given its historical leadership in regional petroleum cooperation, dating back to 1975, Indonesia is ideally positioned to transform the APSA from a theoretical framework into concrete actions, thereby serving as the linchpin for ASEAN's response to critical shortage.

In accordance with the analysis using three sources of non-compliance, it could be concluded that Indonesia's non-compliance towards the implementation of the Second APSA are caused by preference, resource incapacity and inadvertence. Non-compliance as preference occurs due to the absence of law enforcement because the framework is voluntary and therefore non-legally binding. In addition, compliance with the Second APSA is unable to fulfil the national interest in ensuring domestic energy resilience through the release of energy buffer reserves and the provision of stockpiling. Non-compliance due to incapacity was caused by the lack of necessary resources. This can be observed from the declining trend of Indonesian crude oil production, the increasing crude oil trade deficit and the trend of increasing dependence on oil imports, most of which are imports from non-AMS. Non-compliance as inadvertence occurs due to the influence of certain situations – namely, the new priority towards energy transition and because of the geopolitical crisis. Fossil fuels are no longer the *prima donna* because they will always be associated with issues related to climate change and GHG emissions. Meanwhile, the geopolitical crisis has made Indonesia focus more on developing domestic fiscal policies.



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