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ANALYSIS OF THE ASEAN-U.S. COMPREHENSIVE STRATEGIC PARTNERSHIP (CSP) STRATEGY IN ACCELERATING THE ENERGY TRANSITION IN ASEAN 2021–2024

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ABSTRAK

Kawasan Asia Tenggara sangat rentan terhadap krisis iklim global akibat peningkatan bencana hidrometeorologi, ketergantungan energi fosil tinggi (75%–80%), kesenjangan pendanaan transisi energi hingga USD 200 miliar, dan minimnya *green skills*. Penelitian ini bertujuan menganalisis efektivitas kerja sama ASEAN-U.S. Comprehensive Strategic Partnership (CSP) dalam mengakselerasi transisi energi guna mendukung SDGs Tujuan 13 (Climate Action) periode 2021–2024. Metode penelitian menggunakan pendekatan kualitatif studi kasus deskriptif analitis. Pengumpulan data melalui wawancara mendalam (data primer) dan studi dokumentasi (data sekunder). Analisis data secara sistematis menggunakan *Environmental Policy Integration* (EPI) *Framework*, Model Kirkpatrick, Kerangka Kapasitas UNDP, serta Teori Neoliberal Institusionalisme. Hasil penelitian menunjukkan ASEAN-U.S. CSP berhasil memfasilitasi peningkatan target NDC negara anggota, memperkuat kapasitas teknis *ASEAN Centre for Energy* (ACE) pada interkoneksi listrik multilateral LTMS-PIP, serta menyalurkan pembiayaan hijau melalui *U.S. Development Finance Corporation* (DFC) untuk proyek energi bersih di Indonesia, Vietnam, dan Filipina, meskipun menghadapi kendala *funding gap* yang masif.

Katakunci: ASEAN-U.S. CSP, Transisi Energi, SDGs 13, Neoliberal Institusionalisme, Pembiayaan Hijau.

ABSTRACT

Southeast Asia is highly vulnerable to the global climate crisis, marked by an increase in hydrometeorological disasters and high fossil fuel reliance (75%–80%). However, ASEAN faces structural challenges, including an energy transition funding gap of up to USD 200 billion and a shortage of green-skilled workers. This study aims to analyze the effectiveness of the ASEAN–U.S. Comprehensive Strategic Partnership (CSP) in accelerating the energy transition to support SDG Goal 13 (Climate Action) during the 2021–2024 period. Employing a qualitative descriptive-analytical case study approach, data were gathered through in-depth interviews and document reviews. Data were systematically analyzed using the Environmental Policy Integration Framework, Kirkpatrick Model, UNDP Capacity Framework, and Institutional Neoliberalism Theory. Results indicate that the ASEAN–U.S. CSP successfully facilitated an increase in member countries' Nationally Determined Contributions (NDCs), built ASEAN Centre for Energy (ACE) capacity for the LTMS-PIP project, and channeled U.S. DFC green financing to Indonesia, Vietnam, and the Philippines, despite facing a massive funding gap.

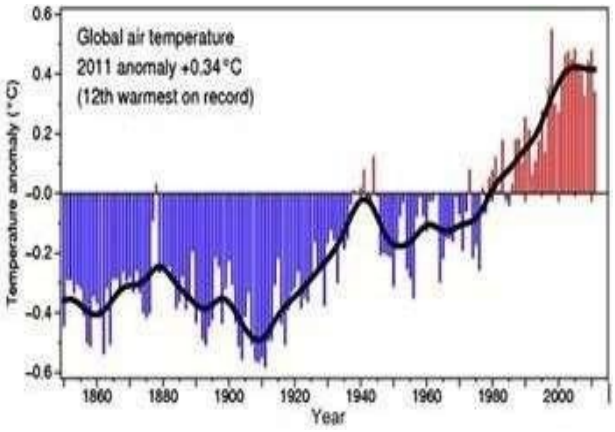
Keywords: ASEAN-U.S. CSP, Energy Transition, SDG 13, Neoliberal Institutionalism, Green Finance.

BACKGROUND

A study by Eckstein et al. (2021) shows that the Philippines, Myanmar, and Thailand are among the ten countries that suffered the greatest losses due to climate events during the 2000–2019 period, while Cambodia and Vietnam rank among the top twenty most-affected countries in the world. Furthermore, seven of the world's twenty-five cities most exposed to the risk of a one-meter rise in sea level are located in the Philippines (Overland et al., 2021). The World Economic Forum also notes that although the rate of warming in Southeast Asia is slightly lower than the global average, sea-level rise in the region is occurring more rapidly than in many other parts of the world. This situation is increasingly alarming because approximately 450 million ASEAN residents live in coastal areas vulnerable to erosion and storm surges (Botterill-James et al., 2024).

ASEAN's climate vulnerability is increasingly evident from rising temperatures and the growing frequency of hydrometeorological disasters in recent years. Data from the World Meteorological Organization show that Asia is warming faster than the global average, with the 2022 average temperature approximately 0.72°C above the 1991–2020 average. In the same year, several ASEAN countries including Indonesia, the Philippines, and Thailand experienced major floods that affected millions of people. The impacts of climate change have also contributed to an increase in disaster-induced population displacement, with Southeast Asia accounting for more than 30 percent of global weather-related displacement (IPCC, 2022b).

Figur 1.
Global temperature anomalies from 1850 to 2010



Source: (Brohan et al., 2006)

As the world's largest source of carbon emissions, ASEAN relies heavily on fossil fuels. Globally, fossil fuels account for 75% to 80% of total greenhouse gas emissions and are responsible for 90% of the world's carbon emissions (IPCC, 2022a). Fossil fuel use in ASEAN accounts for 75%, encompassing crude oil, natural gas, and coal (IPCC, 2022a). Fossil fuel use is primarily concentrated in the power generation

sector at 74%, with coal accounting for 44% of that total. Furthermore, in the transportation sector, gasoline, diesel, and jet fuel are used for land, sea, and air transportation, respectively (IEA, 2025). This continued high dependence must be reduced to address the various threats and disruptions it has caused, such as rising global temperatures, threats to the stability of human communities, and impacts on other ecosystems including plants and animals in their respective habitats.

Myanmar is one of the hardest-hit countries. As a result of the climate crisis, extreme temperatures have reached 48.2°C, and in Myanmar, 43°C. Flash floods have also submerged several major cities, such as Kuala Lumpur, Bangkok, and Jakarta (MIPA, 2025). In addition, threats to food security have emerged in several ASEAN countries classified as moderate or in crisis, with scores of 59.3 for the Philippines, 56.6 for Myanmar, 55.7 for Cambodia, and 53 for Laos (Impact, 2025). The cumulative losses resulting from climate change in ASEAN could reach USD 100 billion (Istianur, 2023).

As the leader who has been took many issues in regional, ASEAN needs to take action to create a regional area that is stable economically, politically, in terms of security, and socially and culturally. Climate issues are among the security challenges that threaten the existence and living space of the ASEAN community. In addressing these issues, ASEAN cannot work alone. Through various established cooperation mechanisms and partnerships, ASEAN is expected to engage its external partners. Capacity and capability from institutional to societal levels as well as assistance and guidance from major nations are essential. ASEAN's primary challenges relate to funding and human resource capacity. ASEAN requires at least $180 billion to $200 billion to achieve its net-zero target (ADB, 2023). Furthermore, according to an analysis of a global LinkedIn report, only about 12.5% or 1 in 8 of the ASEAN workforce possesses at least one green skill. Laporan ini merupakan laporan tahunan yang dikeluarkan LinKedIn bernama *Global Green Skills Report.* This report was compiled by analyzing data from 48 countries, with the sample from Southeast Asia consisting of countries with the highest LinkedIn usage, such as Indonesia, Singapore, Malaysia, the Philippines, Thailand, and Vietnam.

The researchers used a "Skills First" approach, leveraging big data from their digital economy graph. More than 41,000 types of skills were filtered and grouped into "green" skills, ranging from carbon accounting and solar energy to ESG reporting and sustainability analysis. The figure of 12.5% was obtained by dividing the total number of users categorized as "Green Talent" by the total number of active workers on the platform in that region. The method used in this data collection involves a profile-based classification algorithm specifically, "Green Talent." An individual is categorized as "Green Talent" if their LinkedIn profile meets certain criteria, including "Green Jobs" and "Green Skills." For ASEAN, not all countries were included in the study because not all have the same level of data penetration on this platform.

Singapore has the most robust data coverage, at about 14% above the global average, with the financial sector (green finance) serving as the primary driver. Indonesia stands at 5.75%, Malaysia at 5.715%, and both the Philippines and Thailand have also seen a surge in green workforce numbers as regulations related to emissions

reduction have become mandatory within government sectors. Green jobs and skills identified in this region include Sustainability Manager, Safety Manager, and HSE (Health, Safety, and Environment)/Environmental, Social, and Governance Solar Energy Consultant/Engineer, Ecologist, and ESG Analyst/Sustainable Finance Specialist. Meanwhile, the green skills in question include Corporate Sustainability, Carbon Accounting and Carbon Footprinting, and ESG Reporting.

By 2030, projections from the ASEAN Center for Energy indicate the potential for up to 30 million new green jobs to be created. Regionally, job postings requiring at least one green skill have surged by 15–22% annually. Meanwhile, the growth in the number of professionals acquiring green skills or transitioning to green roles (green talent supply) has only crept up by about 4.3% to 5.7% per year. (LinkedIn, 2025).This indicates a gap between workforce readiness and job growth in the green sector.

As one of ASEAN's partners that has maintained cooperation since 1977, the U.S. elevated its partnership status to a Comprehensive Strategic Partnership (CSP) with ASEAN in 2022. This was driven by Joe Biden's progressive policies on environmental issues. One such policy is enshrined in the Inflation Reduction Act (IRA). This policy includes the largest U.S. climate investment in history. Its incentives and subsidies amount to $369 billion for energy security and the energy transition (te Kaat et al., 2024). Biden, whose party's ideology also prioritizes the climate crisis as a key U.S. policy issue, presents a prime opportunity for ASEAN to advance the implementation of SDG 13 in the region. Support from a major power like the U.S. is expected to help ASEAN accelerate its energy transition while simultaneously enhancing its own human resource and institutional capacities. Therefore, this study was conducted to analyze how the ASEAN U.S. Comprehensive Strategic Partnership (CSP) in Accelerating the Energy Transition.

Furthermore, the United States' interest in the implementation of SDG 13 in ASEAN in the context of its rivalry with China is to counter Beijing's influence through institutionalized eco-diplomacy. China is seen as exerting deep dominance through its influence in the Mekong subregion, its control over green technology supply chains, and massive funding for conventional fossil fuel infrastructure. ASEAN's high dependence on such Chinese support risks locking the region into Beijing's sphere of influence and distancing it from transparent international governance standards.

Therefore, for the United States, active engagement in the implementation of SDG 13 in ASEAN is not merely a matter of fulfilling environmental commitments, but a strategic imperative to counter China's hegemony. The U.S. has a vested interest in intervening in vulnerable regions such as the Mekong sub-region through alternative climate financing and the provision of independent scientific data. Furthermore, the U.S. is motivated to lock Southeast Asian markets into Western technology and financial ecosystems by promoting the transition to an electric vehicle (EV) ecosystem, establishing battery (BESS) standards, and mobilizing multilateral funds such as the JETP and DFC to reduce dependence on coal-fired power plants.

Research Question

Based on the background described above, the research question for this study is: To what extent does the ASEAN-U.S. strategy within the Comprehensive Strategic Partnership facilitate the acceleration of the energy transition in ASEAN member states from 2021 to 2024?

Purpose and Objective

This study aims to determine the extent to which the ASEAN–U.S. Comprehensive Strategic Partnership facilitates the acceleration of the energy transition in ASEAN member states from 2021 to 2024

LITERATURE REVIEW

The first literature review is a journal article titled "ASEAN-U.S. Cooperation on Renewable Energy: ASEAN's Response to the Climate Change Phenomenon," written by Dewi Agha Putri and published in 2018. The issue addressed in this study is the greenhouse effect's impact on the ASEAN region, specifically rising sea levels in cities such as Bangkok, Jakarta, Manila, and Yangon. This issue subsequently prompted ASEAN to collaborate with the United States through the USAID Clean Power Asia initiative. The study's findings indicate that this research employed a qualitative research method through the analysis of secondary data. The concept utilized in this study is climate change. The findings indicate that through this collaboration, ASEAN can benefit from U.S. support in areas such as assessment, institutional development, capacity building, investment, technical assistance, data exchange, policy and framework development, and more. This collaboration will help ASEAN achieve its goals. The targets are more achievable by 2025 based on the APAEC 2026–2025 framework. In this way, ASEAN is willing to take responsibility for protecting its member countries from the negative impacts of climate change by promoting the use of renewable energy.

The second literature review is a study titled "Climate Change and Sustainability in ASEAN Countries," written by David K. Ding and Sarah E. Beh and published in 2022. This study addresses the effectiveness of ASEAN's regional efforts to achieve SDG 13 (Climate Action). The research method used was quantitative. The concept employed was that of effectiveness. The results indicate that ASEAN's environmental performance lags significantly behind other regions, despite evidence of its cohesion and comprehensive efforts to mitigate emissions and build adaptive capacity against climate change. This study indicates that within ASEAN, there are disparities in environmental performance among member states. This suggests that enhanced cooperation among ASEAN member states is crucial for achieving these goals. Furthermore, government effectiveness has a positive influence on a country's climate performance, indicating that the government is strong and committed to good governance in addressing climate issues.

The third literature review is a study titled "Losses and Damage Caused by Climate Change in Indonesia: An Overview of ASEAN Cooperation in Adapting to Global Warming," written by DAA Sari and published in 2015. This study addresses

the issue of damage caused by the impacts of climate change in Southeast Asia, focusing on the implications for Indonesia and the ASEAN Climate Change Initiative (ACCI) in addressing them. The concept used is international cooperation. The research findings indicate that, first, as an archipelagic nation, Indonesia is highly vulnerable to the impacts of climate change. Second, Indonesia and other ASEAN countries face resource and capacity constraints, making regional cooperation through the ASEAN Climate Change Initiative (ACCI) essential.

Although previous studies have mapped ASEAN's capacity vulnerabilities (Sari, 2015), disparities in environmental performance effectiveness (Ding & Beh, 2022), and the nature of early technical assistance from the United States (Putri, 2018), these studies tend to view climate cooperation in isolation as a purely environmental effort. There is a significant research gap in examining how the implementation of SDG 13 has transformed into an arena of geopolitical rivalry between the U.S. and China. This study aims to fill that gap by analyzing how the U.S. is leveraging climate institutionalization in ASEAN during the 2021–2024 period to counter China's hegemony through the standardization of green technology and governance in the region.

RESEARCH METHOD

In this study, the researcher employed a case study approach with a descriptive-analytical research design to explain the role of the ASEAN-U.S. partnership dialogue in the implementation of SDG 13. According to Yin, a case study is a research method that explores phenomena within real-life contexts where the boundaries between the phenomenon and its context are unclear. Case studies are used to answer "how" and "why" questions and are useful when researchers seek to understand complex processes or relationships (Yin, 2018). This case study addresses the researcher's question regarding the role of the ASEAN–U.S. partnership dialogue in the implementation of SDG 13 in ASEAN.

The research type employed is descriptive-analytical. Descriptive-analytical research is used to describe phenomena or facts as they occur, followed by an analysis of those phenomena to gain a deeper understanding or identify relationships among variables (Sugiyono, 2015). The objective of this research type is to describe the observed phenomena in detail and systematically, as well as to conduct an analysis to understand the causes, patterns, and relationships among variables within those phenomena (Nazir, 2014). Based on this definition, the researcher will describe the phenomenon of climate change in ASEAN and identify the role of the ASEAN-U.S. partnership dialogue in the implementation of SDG 13.

The data sources for this study are primary and secondary data. According to Hasan, primary data is data obtained or collected directly in the field by the researcher or by the parties involved who require it. Primary data is obtained from informants that is, individuals such as the results of interviews conducted by the researcher. Examples of primary data include: interview transcripts, field observation results, and data regarding the informants (Hasan, 2002). According to Sugiyono, secondary data

is data that is not provided directly to the data collector by the source. Examples include data from other people or documents.

Secondary data serves to support the needs of primary data. In this study, the researcher will use primary data obtained through interviews and secondary data from books, journal articles, government reports, and sources such as the official websites of ASEAN and the U.S., as well as other international institutions related to the U.S.-ASEAN partnership dialogue on addressing climate issues..

DISCUSSION

The Formation of the ASEAN-U.S. Comprehensive Strategic Partnership

U.S. foreign policy is heavily influenced by the the current government. ~~i.~~ In recent decades, various policies have appeared to contradict those of their predecessors, creating dynamics in international or external cooperation. In 2015, when the Strategic Partnership with ASEAN was agreed upon, President Barack Obama emerged as a leader in global climate diplomacy. At that time, he signed the 2015 Paris Agreement with the aim of reducing global warming. However, during the subsequent Trump administration, from 2017 to 2021, there was deregulation and skepticism regarding climate change. The U.S. withdrew from the Paris Agreement in 2017, deeming it detrimental to the domestic economy; it repealed more than 70 of Obama's environmental regulations and prioritized fossil fuel energy independence (National Security, 2026).

Donald Trump decided to withdraw the United States from the Paris Agreement because he believed the climate deal placed an unfair economic burden on U.S. workers, businesses, and taxpayers. Under the "America First"*political doctrine, Trump argued that the agreement's emissions reduction targets could cripple the competitiveness of the domestic manufacturing industry, hinder job growth, and harm traditional energy sectors such as coal and natural gas. In addition, he criticized the agreement for applying lax double standards to other major emitters such as China and India, while requiring the U.S. to implement strict restrictions and provide substantial financial contributions to other countries. Subsequently, during President Joe Biden's term from 2021 to 2025, the U.S. rejoined the Paris Agreement on his first day in office. During this period, a U.S. climate commitment document known as the Inflation Reduction Act (IRA) of 2022 was enacted, marking the largest U.S. climate investment in history. Biden also set ~~a~~n aggressive target to reduce emissions by 50–52% by 2030 and to cut emissions by 6% annually (RIFS, 2025).

The years 2021–2025 mark the U.S.'s return to strengthening its global leadership on climate issues. During this era, Joe Biden a moderate-centrist tends to adopt an institutionalist approach. This is driven by his moderate-centrist ideology (New Democrats). The pillars supporting this ideology include Just Capitalism which supports a regulated market economy and Modern Supply-Side Economics, or bottom-up economic development. This is manifested through massive government investment in infrastructure, domestic manufacturing, and clean energy. Second, Institutional Liberalism which supports civil and social rights as well as an

institutional approach. Biden respects traditional institutions and existing legal procedures. Third, Liberal Internationalism. This pillar focuses on foreign policy direction, ranging from the "Diplomacy of Engagement" an ideology emphasizing that U.S. internal security is inextricably linked to global dynamics to "Value-Based Alliances," reflecting Biden's belief that the U.S. bears a global responsibility to lead the world and defend democracy.

The primary foreign policy strategy adopted by Biden during his tenure is "Foreign Policy for the Middle Class." This policy emphasizes that every foreign policy decision and U.S. engagement on the international stage must yield positive, secure, and direct economic benefits for middle-class workers and their families at home (Smeltz et al., 2021). Through this foreign policy and the ideology it embodies, Biden uses this foreign policy as the primary compass for the CSP ASEAN-U.S. vision. In its implementation of SDG 13, the U.S. under his administration is making Clean Energy Investments by channeling climate and energy transition funding to the ASEAN region through the Just Energy Transition Partnership in Indonesia. The Indonesia JETP agreement was officially launched in November 2022. This milestone took place on the sidelines of the G20 Summit in Bali, which also coincided with the elevation of relations between ASEAN and the United States to a Comprehensive Strategic Partnership (CSP) under the leadership of Joe Biden.

This agreement is implemented through the mobilization of USD 20 billion in multilateral energy transition funding led by the U.S. to finance the early phase-out of coal-fired power plants, such as the 660 MW Cirebon 1 coal-fired power plant project. This funding serves as a catalyst to support local renewable energy projects, accompanied by technical assistance and guidance from a U.S. expert team in aligning domestic regulations and scientific methodologies for a clean energy transition. Through this integrated framework, Indonesia is encouraged to finalize its national Net Zero Target blueprint while raising its emission reduction target in its NDC to 31.89% on its own and to 43.2% with international support. These investments open new export markets for green technologies, solar panels, and electric vehicles produced by American factories. This aligns with his foreign policy, which prioritizes benefiting the domestic U.S. middle class.

The ideology or philosophy embraced by its supporting party, the Democrats, also influenced the inclusion of climate issues in this partnership. The Democratic Party adheres to the philosophy of Liberal Internationalism, in which climate issues are a top priority for the party. The Democrats are the primary drivers of environmental policy and the clean energy transition. The 2020 Democratic Party platform emphasizes that climate change is no longer merely an environmental issue but an existential threat to national security. Based on this comitmment, The Biden-Harris administration has officially designated the climate crisis as an existential national security threat through the National Security Memorandum (NSM-3) and a special U.S. intelligence report (National Intelligence Estimate). In practice, the Pentagon is now integrating climate change risks into all of its combat strategy planning and geopolitical analysis, as extreme weather and rising sea levels have been shown to damage key military infrastructure and trigger transnational conflicts over

scarce natural resources in vulnerable regions such as Southeast Asia (Background & No, 2020). Climate change is transboundary in nature and compels the U.S. to become a collective global leader; consequently, a framework on climate issues has emerged, including Biden's immediate re-entry into the Paris Agreement on his first day in office and his funding of green initiatives in ASEAN (Ihsan, 2022).

ASEAN Energy Transition Architecture

By 2025, ASEAN aims for Renewable Energy (RE) to account for 23% of its energy mix. Through RE, ASEAN seeks to accelerate the energy transition in the region. The primary objectives of this target are to reduce carbon emissions, decrease reliance on fossil fuels, and address the surge in energy demand across Southeast Asia (IESR, 2024). Carbon emissions in ASEAN as of 2021 were recorded at 4,000 million metric tons of carbon dioxide equivalent ($MTCO_2e$) of greenhouse gases, with reliance on fossil fuels reaching 75% to 80% of the region's total energy supply. The surge in energy demand in the region also reached approximately 3.0% to 5.0% (ACE, 2015).

Renewable energy (RE) initiatives and the strengthening of climate institutions in Southeast Asia are systematically established and facilitated through the strategic partnership pillar between ASEAN and the United States. These efforts have been realized through a range of initiatives, from the establishment of the ASEAN-U.S. Comprehensive Strategic Partnership (CSP) Forum in 2022—based on the 2021–2025 Plan of Action (AoP)—to the founding of the ASEAN Centre for Climate Change (ACCC) in Brunei Darussalam in 2021 as a regional hub for green policy coordination.

This synergy was concretely strengthened in June 2023 through a partnership between the USAID Southeast Asia Smart Power Program (SPP) and the ASEAN Centre for Energy (ACE), which provided a grant of USD 3 million to develop technical regulations for Grid Codes Harmonization for Variable Renewable Energy (VRE) technologies, with the aim of facilitating the regional multilateral electricity interconnection project (LTMS-PIP) while pursuing the regional renewable energy mix target of 23%.

However, in practice, ASEAN faces various challenges. First, there is a funding and investment gap. ASEAN requires massive annual investment in energy, yet actual funding remains minimal and is still heavily reliant on public funds. Second, high dependence on fossil fuels makes it difficult for the region to accelerate the use of renewable energy. Most countries still rely on coal, oil, and natural gas as the backbone of their domestic energy security and post-pandemic economic recovery. Third, there are limitations in grid infrastructure, such as insufficient inter-island or cross-border transmission infrastructure and energy storage systems. Finally, there are regulatory and policy constraints. National policies sometimes overlap with regional targets, compounded by the continued existence of fossil fuel subsidies in some countries (ACE, 2022; ADB, 2024; ERIA, 2024).

The transformation of US-ASEAN relations entered a crucial momentum under the administration of U.S. President Joe Biden, whose progressive climate ideology aligned with the region's environmental urgency, presenting a "golden opportunity" for ASEAN to implement various programs under SDG 13. This cooperation was

historically initiated by both parties during the 9th ASEAN-U.S. Summit in October 2021, where President Biden personally joined ASEAN leaders virtually to reaffirm the U.S. commitment to the region after years of diplomatic absence. The institutional process intensified through the ASEAN-U.S. Special Summit held in Washington, D.C., in May 2022, where both sides formally agreed to elevate their ties. Ultimately, this diplomatic process culminated at the 10th ASEAN-U.S. Summit in Phnom Penh, Cambodia, in November 2022, where the partnership was officially elevated to a Comprehensive Strategic Partnership (CSP).

The CSP serves as a high-level formal framework designed to enhance comprehensive institutional cooperation between the U.S. and ASEAN member states in addressing critical economic, security, technological, and environmental challenges. Under this newly elevated framework, five priority areas of cooperation were established to drive the partnership forward, consisting of the digital economy and trade, energy and climate, public health, maritime and transnational security, and education and human resources. (ASEAN, 2022). The five areas of cooperation under the CSP include the digital economy and trade, energy and climate, public health, maritime and transnational security, and education and human resources.

One of ASEAN's key priorities under SDG 13 particularly following the strengthening of this partnership—is addressing specific needs. These needs include funding, technology, and capacity building. Although ASEAN has made this issue a priority, it faces funding challenges in its implementation. As a region that continues to grow, ASEAN requires assistance and support from external parties especially those with substantial resources to address the challenges it faces. The issue of climate change is relatively new in ASEAN, so it requires various forms of assistance both technical and financial to achieve its climate vision. The following factors highlight the challenges of climate financing in ASEAN.

First, a massive funding gap persists. ASEAN requires at least $210 billion annually to achieve its climate targets, yet actual regional funding inflows remain at approximately $40 billion per year, satisfying less than 19% of the total requirement. Second, ASEAN countries remain heavily reliant on government public budgets, which are constrained by global inflation and rising debt burdens. This financial constraint heavily impacts developing member states with GDP per capita below $15,000 USD such as Vietnam, the Philippines, Cambodia, Laos, and Myanmar, which require the most urgent financial and technical assistance due to high climate vulnerability and limited domestic fiscal space. Third, private-sector involvement remains very low.

Many global private entities view green projects in Southeast Asia as high-risk due to legal uncertainty, bureaucratic hurdles, and a shortage of "bankable" projects that meet international financial viability standards. To bridge this gap, the partnership strategically engages key private actors, including regional clean energy developers like PT Medco Power Indonesia and Ormat Technologies, alongside local commercial banks that act as intermediaries to channel low-interest green loans to small-and-medium enterprises (SMEs).

Furthermore, funding across ASEAN is highly uneven. While higher-income countries like Singapore (with a GDP per capita of $99,040 USD) easily secure green bonds, other member states face severe structural barriers. This enhanced partnership is expected to address these systemic challenges by acting as a crucial supporting mechanism to mobilize private green investments and build institutional capacity across the region. (Damuri et al., 2023). This enhanced partnership is expected to address the challenges ASEAN faces in implementing SDGs 13.

Implementation of the ASEAN-U.S. CSP Strategy through the Pillars of Accelerating the Energy Transition

ASEAN is highly committed to integrating climate change measures into its regional policies to prevent catastrophic economic losses, which are projected by the IMF to average USD 100 billion annually across the region. Through its strategic partnership with the United States governmentacting as a crucial public supporting mechanism—this regional commitment has been operationalized through major state-funded programs, including the ASEAN-U.S. Climate Futures Initiative, NDC Support, LT-LEDS Support, and specialized Energy Transition Programs.

Launched as a comprehensive intergovernmental initiative covering all ten ASEAN Member States (AMS), the ASEAN-U.S. Climate Futures Initiative concretely manifested in 2023 through the establishment of SERVIR Southeast Asia. This initiative is a high-level government-to-government collaboration implemented by the United States Agency for International Development (USAID) alongside the National Aeronautics and Space Administration (NASA). The program works by distributing real-time geospatial satellite data directly to ASEAN governmental bodies to map climate risks, detect deforestation, and mitigate flood disasters in highly vulnerable areas.

Beyond this public sector infrastructure, the U.S. government strategically leverages these programs to trigger "issue-linkage," mobilizing private sector engagement through mechanisms like the USD 40 million USAID Southeast Asia Smart Power Program (SPP) and a USD 100 million credit guarantee from the U.S. Development Finance Corporation (DFC) to local banks. This dual-track process ensures that while regional frameworks and scientific data are standardized at the intergovernmental level, the transition is continuously fueled by Privat green investments stabilizing at USD 5.5 to 5.6 billion annually across the region.

The program also provides technical capacity-building training. From 2023 to 2024, it facilitated 11 intensive, certified training sessions attended by 365 technical experts from the environmental ministries of ASEAN member states. Additionally, the Rainstorm Tracker was launched in real time, helping to reduce potential material losses from flooding, which average $70 million per year. Regarding support for NDCs and LT-LEDS, throughout 2021–2024, nearly all ASEAN member states updated their documents with increased NDC targets. Indonesia raised its emission reduction target from 29% to 31.89% without international assistance and from 41% to 43.2% with international assistance. ASEAN countries such as Indonesia, Malaysia, Vietnam, and Singapore successfully finalized their Net Zero Target blueprints. Meanwhile, a

tangible outcome of the Just Energy Transition Partnership/JETP the commitment of $20 billion in energy transition funding for Indonesia and $15.5 billion for Vietnam to phase out coal-fired power plants. Second, the implementation of a Real Carbon Tax, with Singapore officially raising its carbon tax to S$25 per metric ton of CO2e in 2024 a sharp increase from S$5 during 2019–2023. USAID has trained and certified more than 5,000 professionals and technicians in the fields of solar power generation, energy auditing, and green finance across ASEAN. Private green investment has remained stable at $5.5 billion to $5.6 billion per year from 2021 to 2024 (Martinus, 2024).

Author measure the success of this strategy using the Environmental Policy Integration (EPI) Framework. This method is a strategic approach that requires the integration of environmental protection goals into all non-environmental policy sectors (such as agriculture, energy, and transportation), rather than relying solely on specific environmental policies. This analysis begins with vertical and horizontal integration. In this context, horizontal integration evaluates the overarching alignment of climate objectives across various non-environmental sectors and regional frameworks to ensure policy coherence and prevent conflicting strategies. Concurrently, vertical integration examines the depth of this process within specific institutions, measuring how effectively high-level environmental mandates are translated into the internal agendas, budgeting, and operational capacities of individual sectoral bodies.

Table 1
Analysis of Target 13.2 : Integrate climate change measures into national policies, strategies and planning Achievement Using the EPI Framework

Dimensions of Integration	Analysis Focus	Data on Achievement
Vertical Integration	Measures how non-environmental sectoral ministries (Energy, Transportation, Finance, Forestry) have incorporated climate targets into their internal agendas.	1. Energy & Financial Sectors: Through the $40 million USAID Southeast Asia Smart Power Program (SPP), local energy ministries are encouraged to conduct feasibility studies for large-scale renewable energy projects 2. Finance & SME Sectors: The U.S.-owned DFC provided a to local banks in Indonesia to facilitate low-interest loans for SMEs transitioning to renewable energy. 3. Transportation & Industrial Sector: To address the rapidly rising fossil fuel consumption (Yellow Light), a U.S. partnership program is intervening by finalizing a blueprint for the transition of transportation to a battery-based Electric Vehicle (EV) ecosystem.

Horizontal Integration	Measuring the alignment of macro-level commitments among countries at the regional level as well as the synchronization of national strategies with international roadmaps.	1. Enhancing Global Commitments (NDCs): Nearly all ASEAN member states have updated their documents by raising their NDC targets (2021–2024). For example, Indonesia raised its autonomous emissions reduction target from 29% to 31.89%, and its target with international assistance from 41% to 43.2%. 2. Alignment of Long-Term Blueprints: Key countries such as Indonesia, Malaysia, Vietnam, and Singapore have successfully finalized national Net Zero Target blueprints that are aligned with regional temperature limitation targets. Data Standardization Geospatial: Cross-border Data Integration

Source: various secondary data. Table compiled by the researcher

Regional Energy Connectivity

ASEAN's goals of improving climate education and institutional capacity are being realized through strategic dialogue schemes, which directly address the structural barriers within the region's green transition. In its efforts to build human capacity, ASEAN aims to reduce critical technical skill gaps where currently a significant mismatch exists with only 12.5% of the workforce possessing green skills in order to prepare professionals for future climate adaptation.

Resolving this capacity deficit is highly critical because ASEAN requires specialized, high-quality technical expertise to formulate complex regional architectures, such as the ASEAN Carbon Framework (ACCF) and standardized Monitoring, Reporting, and Verification (MRV) systems. Through this collaborative human capital development, local experts can effectively transform complex global datasets into viable nature-based solutions, thereby turning high-level policy commitments into measurable environmental outcomes

Furthermore, in the face of natural disasters, ASEAN seeks to strengthen climate institutions that will produce a cohesive framework, defined as an integrated regulatory system that harmonizes individual national climate targets with regional roadmaps. Strong institutions will align Nationally Determined Contributions (NDCs) with broader regional roadmaps such as the ASEAN Strategic Climate Change Action Plan (ACCSAP) and the ASEAN Climate Vision. Crucially, the implementation of this regional climate framework acts as a major catalyst for economic transition, which is projected to create up to 1.3 million new green jobs in the renewable energy sector,

with the greatest demand in solar power at 54%. However, translating this environmental program into actual employment opportunities requires robust institutional capacity building to address the region's current talent shortage. Data shows a significant disparity between job growth and the supply of skilled workers, at 22.4% and 12.3% respectively in the region. Similar data also highlights the urgency of skills development, showing that only 1 in 8 workers in ASEAN (12.5%) has just one green skill listed on their profile (LinkedIn 2024). This situation is a cause for concern for the region because, according to the latest research, the renewable energy sector in ASEAN is expected to create up to 1.3 million jobs, with the greatest demand in the solar power sector at 54% (World Bank, 2026).

Between 2021 and 2024, this issue was addressed through several key capacity-building projects funded and supported by U.S. government agencies. First, the USAID Southeast Asia Smart Power Program (SPP). This project awarded a $3 million grant to the ASEAN Centre for Energy (ACE) in June 2023. As a result, the technical capacity of local engineers and regulators has improved, enabling them to integrate solar and wind energy into the ASEAN Power Grid (APG) to meet the regional renewable energy mix target of 23% by 2025. This technical capacity building is evident in the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP). This project was launched in 2022.

This environmentally friendly hydroelectric power is generated in Laos and transmitted through the power grids of Thailand and Malaysia before it is ultimately purchased and consumed in Singapore. The initial electricity capacity reached 100 megawatts and is set to increase to 200 MW by the end of 2024. Similar projects were also initiated during this period, namely the Brunei Darussalam-Indonesia-Malaysia-Philippines Power Integration Project in 2023 and the Indonesia-Singapore Solar Power Export Project (ASEAN Centre for Energy (ACE) 2024). These environmentally friendly high-tech projects have successfully absorbed local labor in the ASEAN region and are expected to be sustainable by creating more skilled jobs. In the AGP project, for example, there were 13,000–14,000 local workers from 2021 to 2024. Other projects have also successfully employed domestic experts from each country, including operators, grid engineers, and local financial analysts (UNESCAP, 2023).

Through this study, the author aims to assess the extent to which the resulting programs have successfully strengthened the ACCC as the institution responsible for energy affairs in the ASEAN region. The researcher will apply the Kirkpatrick model at the technical/individual level and use the UNDP capacity framework at the policy or institutional level specifically for the ACCC. The Kirkpatrick evaluation model is used to measure the success and effectiveness of a program or training initiative. It comprises four levels: reaction, learning, behavior, and results. The UNDP framework will be used by researchers to measure, analyze, and develop the capabilities of individuals, organizations, and communities. The following is an analysis of program achievements and evaluation using these two assessment systems.

Table 2

Analysis of Capacity-Building Outcomes Using the Kirkpatrick Model

Analysis Level	Indicators and Focus of Analysis	Evidence and Outcomes
Level 1	Measuring the urgency, relevance, and initial response of participants to the training program conducted.	1. The high urgency of the program is driven by the green skills gap in the region: only 12.5% (out of 8) of in ASEAN have green skills listed in their profiles 2. The growth in green job openings in the region reached 22.4%, yet the supply of available skilled workers stands at only 12.3%
Level 2	Improvement of the participants' knowledge, competencies, and specific technical skills of participants following the training.	1. Regional power system operators are trained to master multi-country grid management, parameter harmonization parameters, the operation of submarine cables, and dynamic transmission when capacity is increased to 2 MW 2. Workers are provided with an in-depth understanding of the cost structure cross-border trade compensation and alignment with the Singapore electricity market.
Level 3	Application of new skills and technologies by actors/participants in real-world operational settings.	1. Transmission System Operators (TSOs) such as EGAT in Thailand are implementing the expertise to conduct real-time data exchange regarding electricity flowing from Laos to Singapore. 2. Indigenous communities in the Kaeng Krachan Forest Complex (Thailand) are adopting new practices for collecting data on biodiversity using smartphones via the SMAR (Spatial Monitoring and Reporting Tool)
Level 4	Final and tangible impact that are measurable in terms of achieving the organization's macro targets as well	1. The LTMS-PIP project successfully doubled electricity import capacity, from 100 MW (2022) to 200 MW (2024) 2. Supporting 23% of ASEAN's renewable energy mix and 35% of installed energy capacity.

	as those of the regional area.	3. Singapore's in Singapore have been successfully reduced by 106,000 metric

Source: various secondary data. Table compiled by the researcher

Table 3 Analysis using UNDP

Level of Analysis	Indicators and Focus of Analysis	Evidence and Achievements
Individual Level	Development of professionalism, practical skills, employment, and innovation among local actors/youth.	1. The capacity-building project has successfully recruited and trained 13,000 to 14,000 local workers in the region, including operators, network engineers, and domestic financial analysts 2. The YSEALI & Fulbright networks are creating community-based climate tech solutions: the "Cutting Carbon in Myanmar" program is changing local practices to stop the burning of crop residues, while an IoT group in Indonesia has successfully reduced water use by 50% and increased crop yields by 15% through smart farming.
Level 2: Organizations	Strengthening the functions, governance, operational authority, and autonomy of regional climate institutions (ACCC & ACE).	1. The capacity-building project has successfully recruited and trained 13,000 to 14,000 local workers in theACCC has established a clear strategic direction as an institution 2. ACCC transforms into a legally independent regional climate advisory body equipped with its own supercomputer modeling technology 3. The organization's credibility attracts investment and long-term funding from non-partner countries dialogue (Norway & Australia) to be managed under ACCC supervision

Enabling Environment	Standardization of rules, adoption of macro-level regulations, , and recognition by global financial markets.	1. In collaboration with the U.S. DOE, GHG inventory methodologies was standardized so that ASEAN countries' emissions data are validly recognized under the Paris Agreement standards 2. The creation of a comprehensive document assessing regional climate needs, which was officially adopted int the ASEAN energy blueprint to alig clean energy transition targets. 3. The Indigenous Peoples' (MHA) in Kalimantan gained geospatial and legal tenure capacity to obtain an Official Indigenous Forest Certificate from the state to protect forests from illegal corporate expansion 4. Macro data is internationally recognized by the global banking sector to facilitate green (Green Finance) in Southeast Asia

Source: various secondary data. Table compiled by the researcher

From the perspective of Neoliberal Institutionalism, this series of training sessions facilitated by the ASEAN-U.S. partnership represents an effort by international institutions to address market failures resulting from information asymmetry regarding green skills in Southeast Asia. Through the formation of an Epistemic Community (community of experts) sharing common technical indicators, these institutions have succeeded in reducing transaction costs in multilateral electricity trade. Real-time data transparency among TSOs eliminates the potential for cheating between countries. The massive end results (reduced emissions and increased MW) demonstrate the creation of Absolute Gains. These tangible benefits triggered a Spillover Effect (domino effect), in which Singapore extended project licenses through 2026, Malaysia joined as a direct provider, and similar projects were replicated in other sub-regions through BIMP-PIP.

Green Energy Financing

Climate finance is one of the urgent needs facing ASEAN. Although ASEAN has a vision that is quite ambitious similar to that of other countries or international organizations regarding climate issues—limited funds or budgets often pose a problem. The domestic economic and political security situations of each country also serve as one of the factors preventing countries from allocating substantial internal funding for climate issues. ASEAN has set a funding target of $210 billion for the period 2019–2030. This figure is equivalent to 5.7% of the combined Gross Domestic Product (GDP) of ASEAN countries. Allocating 5.7% of GDP to a single sector alone pushes these countries to the limits of their fiscal capacity. Most ASEAN countries allocate 15%–20% of their GDP to national needs (civil servant salaries, education, the military, healthcare, etc.) (Darana 2024). Meanwhile, according to a UNDP report, funding for the climate action sector in ASEAN currently stands at only USD 40 billion per year. This figure represents only 12%–19% of ASEAN's total needs (UNDP 2025).

The U.S. has several climate financing schemes under this partnership. First is the USAID Southeast Asia Smart Power Program (SPP). This program provides funding to modernize control centers through a Technical Grant Fund of approximately USD 40 million for the transfer of expertise, smart grid system training, and the integration of advanced simulation software in collaboration with PLN/Perusahaan Listrik negara and EGAT/ *Electricity Generating Authority of Thailand*. As a result, the expertise transfer under this program successfully trained 1,500 energy professionals in ASEAN through a collaboration between USAID, the ASEAN Center for Energy (ACE), and the Heads of ASEAN Utilities/Authorities (HAPUA, 2023).

PLN in Indonesia and EGAT in Thailand also received dozens of intensive training sessions. The training focused on managing Variable Renewable Energy (VRE). A tangible achievement of this training was, first, the implementation of regional electricity trade—whereas previously, ASEAN countries had been skeptical about purchasing renewable electricity from other ASEAN nations. Following the VRE training, regional technical regulations known as "Grid Codes harmonization" were established, ensuring that ASEAN countries share a common level of VRE expertise. This has been the primary driver enabling the LTMS-PIP multilateral electricity corridor to operate seamlessly since 2022 (Reap et al. 2023). Second, this training also led to regulations in ASEAN requiring that hybrid renewable energy power plant projects be paired with large-scale batteries, or Battery Energy Storage Systems (BESS), and has now positioned ASEAN as a hub for investment in new battery technology. These hubs are located in Batam, the Philippines, and Cambodia. This new market has brought significant benefits to the region (Olsen 2016). Investment in this sector skyrocketed by 570% in 2022, reaching approximately USD 15 billion to USD 20 billion (ElectricIndonesia, 2026).

This new market brings several other benefits. First, 150,000 electric vehicles are produced annually using commercial battery cells in Karawang, Indonesia. Annual production at the materials plant in Kendal, Indonesia, also reaches 80,000 metric tons, with a potential profit margin of 9% through this project. Employment reaches 2,800

workers in just one cluster of manufacturing facilities (Nam 2025). In addition to its economic impact, this project also has a positive effect on the region's climate performance indicators. This sector accounts for 60% of the region's growth. The actual contribution of electricity reached 5% in 2024, up from 2.3% in 2020. Vietnam accounts for more than 12% of Vietnam's domestic electricity production, followed by Cambodia at 7.6% and Thailand at 6.3% (Setyawati, 2026). The following table shows the renewable energy mix in ASEAN for 2021–2024, as reported by VRE.

Table 4 ASEAN Renewable Energy Mix, 2021–2024

Regional Energy Indicator	Key Targets	Actual Achievment	Role of VRE (U.S.-ASEAN Partnership)
Installed Clean Energy Capacity	35% of total generation by 2025	39.6% by 2024	Driven by a surge in VRE projects

Source: various secondary data. Table compiled by the researcher

The second scheme utilized is the DFC (U.S. Development Finance Corporation) financing program, which provides direct loans to clean energy projects in ASEAN. The total disbursement amounts to USD 2 billion for financial services and clean energy infrastructure. In Vietnam, the total received was USD 737 million, with a focus on renewable energy infrastructure and inclusive financial services for green SMEs. These services accounted for 4.5% of Vietnam's total credit mix, with the green finance sector growing consistently at a rate of 21%. This figure is projected to surge to USD 25.6 billion through foreign liquidity injections (PwC 2025). Additionally, 30% of this amount is allocated to sustainable agribusiness. Local farmers are purchasing modern, energy-efficient equipment, funding organic food certification, and building low-emission aquaculture infrastructure. This program has successfully empowered small businesses in rural Vietnam to play an equal financial role in the energy transition movement. The mechanism works by channeling these loans to local banks in Vietnam, which then disburse green loans to MSMEs. This scheme helps address structural barriers such as high local bank interest rates and a lack of collateral (Bcompan, 2025).

In Indonesia, the DFC officially provided a loan of USD 126 million to PT Medco Power Indonesia and Ormat Technologies to finance the 31 MW Blawan Ijen Geothermal Power Plant in East Java, which supplies integrated clean energy for base load (A. Report 2024). This power plant integrates the Java-Madura-Bali interconnection grid via 83 towers with a 150 kV transmission line, supplying 85,000 households with clean energy and successfully reducing regional emissions by 230,000

metric tons of CO_2. Additionally, a 30-year long-term contract ensures long-term green energy security in East Java.

This project also serves as a concrete blueprint for direct private-sector lending (MedcoEnergi 2024). The Philippines, as one of the recipient countries with a total budget of USD 80 million, has successfully built climate resilience through disaster-resilient digital infrastructure, thereby helping 2.5 million residents in remote areas by connecting them to a network that remains stable despite disruptions and disasters (GovPH 2024). Similarly, in Vietnam, the green credit scheme has also helped 450,000 farmers and MSME operators purchase climate-resilient equipment and environmentally friendly fishing gear (DFC 2024). The initial funds received were specifically used to finalize feasibility studies for solar and wind power projects. These projects have successfully reduced carbon emissions

The ASEAN –U.S. partnership dialogue serves as a supporting mechanism for the implementation of the agreed-upon climate agenda. The $210 billion annual budget for climate issues is an allocation that has been agreed upon by member states. which serves as a Supporting Mechanism for the implementation of the agreed-upon climate agenda. Funding of USD 210 billion per year for climate issues is the budget agreed upon by member states. The U.S. is present here as a supporter, particularly regarding funding a dilemma faced by every developing region. Joe Biden's progressive climate policies present an open opportunity for ASEAN in terms of climate financing. Under his policy, Biden will allocate USD 11.4 billion per year in climate financing to other countries (te Kaat et al. 2024).

This budget target includes USD 3 billion per year for adaptation and a multilateral contribution of USD 3 billion for UN climate agenda financing (Government 2023). When calculated, this funding is indeed insufficient to address the climate financing challenges in ASEAN. However, as one of ASEAN's progressive external partners on climate issues during this period, this partnership serves as a key source of funding for ASEAN's climate programs in the region. In the Philippines, this contribution has successfully reduced emissions by 180,000 metric tons.

Challenges in Implementing the ASEAN-U.S. CSP Strategy for ASEAN's Energy Transition

Challenges in implementing the ASEAN-U.S. CSP strategy include the funding gap. This issue encompasses, first, the disparity between funding needs and actual funding: ASEAN's actual funding needs for climate adaptation and mitigation are massive, reaching USD 200 billion to USD 210 billion per year. Meanwhile, the funding that can be provided or mobilized through international partnerships (such as with the U.S.) generally remains in the range of millions to billions of dollars. Researchers note that the cumulative amount of this aid meets less than 1% of the region's total needs. Second, the Human Resource Capacity and Green Skills Gap, which includes limitations in technical expertise (stagnation): The climate ambitions outlined in each ASEAN country's NDC are very high; however, the skills of domestic human resources ranging from the ability to draft proposals and regulatory documents to the

operation of high-tech, environmentally friendly technologies have stagnated, and there is a shortage of skilled professionals.

Second, these challenges include: Reliance on Labor-Intensive and Informal Sectors: The majority of ASEAN countries are developing nations with an average per capita income below USD 15,000 (except for Singapore). Their economic structures remain heavily dependent on conventional, labor-intensive manufacturing industries and feature a very large informal sector. Second, Transportation and Industrial Sectors Are Stagnating: Consumption of conventional fossil fuels in ASEAN's domestic transportation and industrial sectors continues to rise at a very rapid pace. This is why this policy integration indicator has been given a "Lagging / Yellow Light" status. Finally, Suboptimal Utilization of Energy Potential: Although ASEAN is abundantly rich in environmentally friendly natural resources

CONCLUSIONS

This study examines the effectiveness of the ASEAN-U.S. Comprehensive Strategic Partnership (CSP) strategy in accelerating the transition to sustainable energy to support the implementation of SDG Goal 13 (Climate Action) in the Southeast Asian region during the 2021–2024 period. Based on an analysis through secondary data from various policy documents and international reports, this study draws several key conclusions:

1. **Effectiveness of Partnership Status Upgrade (EPI & Kirkpatrick Model):**

   The upgrade of the partnership to CSP status in 2022 under President Joe Biden's leadership proved to be a key catalyst for both ASEAN's external and internal climate agendas. As assessed through the Environmental Policy Integration (EPI) Framework, this cooperation successfully fostered more aligned climate policy integration, reflected in the increased NDC (Nationally Determined Contributions) targets of member states and the integration of the SERVIR Southeast Asia program. Based on the Kirkpatrick Model evaluation, the impact of this partnership has reached the highest level (Results), as evidenced by a real reduction in carbon emissions of 106,000 metric tons in Singapore as a direct result of the optimization of regional electricity interconnection lines.
2. **Regional Capacity Building (UNDP Capacity Framework):**

   Through the USAID Southeast Asia Smart Power Program (SPP), this partnership has substantially strengthened the institutional capacity of the ASEAN Centre for Energy (ACE) and local Transmission System Operators (TSOs). This capacity-building effort successfully minimized technical and regulatory barriers to the operationalization of the region's first multilateral power grid—the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP)—up to a capacity of 200 MW.
3. **Mobilizing Green Finance and Overcoming Structural Barriers:**

The financing component led by the U.S. Development Finance Corporation (DFC) successfully channeled strategic investments, such as low-emission SME financing in Vietnam and direct funding of USD 126 million for the 31 MW Blawan Ijen Geothermal Power Plant (PLTP) project in Indonesia. However, from a macro perspective, the effectiveness of these partnerships is still hampered by structural barriers in the form of a massive funding gap (international aid covers less than 1% of the region's actual annual need of USD 180–200 billion), a green skills gap, and high domestic dependence on labor-intensive fossil-fuel-based sectors.

4. **The Institutional Neoliberalism Perspective:**

   The ASEAN-U.S. CSP collaboration confirms the validity of the assumptions of Neoliberal Institutionalism, under which international institutions are capable of facilitating the achievement of absolute gains for both parties. This partnership has successfully reduced cross-border transaction costs through the development of Grid Codes Harmonization and the strengthening of the regional epistemic community, which in turn accelerates the achievement of ASEAN's collective energy transition targets amid the global climate crisis

The researchers also made several recommendations based on the results of this study

1. **For the ASEAN Secretariat and the ASEAN Center for Energy (ACE):**

   ASEAN needs to optimize its political bargaining position within the CSP framework to encourage the U.S. to formulate more flexible and innovative financing schemes, such as debt-for-climate swaps or enhanced low-risk investment guarantees (de-risking instruments). This is crucial to narrowing the regional energy transition investment funding gap that has not yet been covered by conventional donors.

2. **For the Governments of ASEAN Member States and the United States:**

   Future partnerships should not focus solely on physical infrastructure development (such as grid interconnections), but must also be significantly allocated to the pillar of human resource development. USAID and DFC programs need to expand the scope of their technical assistance to include vocational education and regional standardization to address the green skills gap among the local workforce.

3. **For the Domestic Sector (Multi-Stakeholder Synergy):**

   ASEAN countries need to accelerate the harmonization of internal regulations, particularly regarding carbon tax incentives and legal certainty for private renewable energy investments, so that the green financing ecosystem offered by institutions such as the DFC can be optimally utilized by domestic actors (both state-owned enterprises and the private sector).

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