

## COMPARISON OF CARBON TRADING IN ASEAN COUNTRIES: AN EXPLANATION FROM A POLICY PERSPECTIVE

Ilham Dwi Rafiqi\*, Nikmah Mentari\*\*  
Faculty of Law, Universitas Hang Tuah

### Abstract

*Along with the threat of the climate crisis, countries in the world are starting to make efforts to mitigate and adapt to climate change. This commitment is outlined in the Earth Summit, Kyoto Protocol and even the Paris Agreement. One form of effort is to carry out carbon trading as an economic instrument in controlling climate change. In the course of its implementation, carbon trading can actually give rise to problems of conflict, evictions, violations of human rights, and even an increase in carbon emissions, especially for developing countries as carbon providers/carbon offsets. Thus, an assessment needs to be carried out to find out the source of the problem. This article aims to examine carbon trading policies in ASEAN countries in an effort to find comparisons as well as existing shortcomings or problems. The method used is normative legal research with a statutory approach and a comparative approach to examine differences in policies from each country. It is hoped that this article can provide a contribution in the form of an analytical picture and information that can help the government to continue to make improvements through economic instruments to control climate change.*

**Keywords:** *policy comparison; carbon trading; ASEAN*

### A. Background

Climate change is a clear and present threat to human existence. The adverse impacts of climate change are spreading throughout the world and are getting stronger every year. It is estimated that it will exceed the temperature threshold of 1.5°C, even reaching 50% in the next few decades.<sup>1</sup> Global average temperatures near the surface between 2023 and 2027 are expected to increase by 1.5 degrees Celsius above pre-industrial (1850-1900) levels for at least a year. The Intergovernmental Panel on Climate Change (IPCC) report even gave a red warning for the threat of human extinction (code red for humanity) because the condition of the earth is getting worse.<sup>2</sup>

Climate change can affect human life in various aspects, social, cultural and health.<sup>3</sup> In particular, climate change, both directly and indirectly, can affect economic growth. The impact of climate change on economic performance is not only limited to its effect on average temperatures. Extreme weather events such as droughts and fires, as well as changes in sea levels can

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\*ilham.rafiqi@hangtuah.ac.id

<sup>1</sup> James H. Stock, "Climate Change, Climate Policy, and Economic Growth," *NBER Macroeconomics Annual* 34 (2019): 400–419, <https://doi.org/https://doi.org/10.1086/707193>.

<sup>2</sup> Marcus Kauffman, "IPCC Report: 'Code Red' for Human Driven Global Heating, Warns UN Chief," 2021, <https://news.un.org/en/story/2021/08/1097362>. accessed January 12, 2024

<sup>3</sup> Indah Dwi Qurbani & Ilham Dwi Rafiqi, "Prospective Green Constitution in New and Renewable Energy Regulation," *Legality: Jurnal Ilmiah Hukum* 30, no. 1 (2022): 68–87, <https://doi.org/https://doi.org/10.22219/ljih.v30i1.18289>.

threaten global economic performance.<sup>4</sup> Climate change is estimated to reduce 4-18% percent of global Gross Domestic Product (GDP) by 2050, while ASEAN is expected to lose 4-37% percent of its GDP.<sup>5</sup>

Due to this, steps to deal with climate change can also be taken through an economic approach. One of the economic instruments currently used is carbon trading. Carbon trading is a subset of carbon transactions that includes the purchase and sale of credits that allow companies or other entities to offset greenhouse gas (GHG) emissions by investing in carbon sequestration projects, renewable energy projects, or purchasing credits from exchanges/platforms. One tradable carbon credit is equal to one tonne of carbon dioxide, or the equivalent amount of various greenhouse gases reduced, absorbed, or avoided. A carbon market is a trading system where carbon credits are bought and sold.<sup>6</sup>

Although carbon markets have been around for more than a decade, they have been a big focus since the Glasgow Conference of the Parties (COP26) in 2021. Country parties to the United Nations Framework Convention on Climate Change (UNFCCC) or generally called the Paris Agreement, reached an important agreement regarding Article 6 which discusses international cooperation regarding carbon markets. The rules and their implementation will allow countries to use various carbon credit mechanisms to meet emission reduction targets set in Nationally Determined Contributions (NDCs).<sup>7</sup> Prior to that, basically a sustainable economy had been initiated in steps to deal with climate change, namely through the Kyoto Protocol in 1977 and the Paris Agreement in 2015.

In the Kyoto Protocol there are 3 forms of mechanisms or the Kyoto Flexible Mechanism in carbon trading. First, carbon trading, where developed countries can exchange their emission reduction obligations. Second, Joint Implementation (JI), where developed countries can make efforts to reduce their emissions through emission reduction projects implemented in other developed countries. Third, the Clean Development Mechanism (CDM) where developed countries are allowed to carry out emission reduction project activities in developing countries. The carbon reduced from CDM is then

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<sup>4</sup> Rebecca Gasper & Andrew Blohm, "Matthias Ruth, Social and Economic Impacts of Climate Change on the Urban Environment," *Current Opinion in Environmental Sustainability* 3, no. 3 (2011): 150–57, <https://doi.org/https://doi.org/10.1016/j.cosust.2010.12.009>.

<sup>5</sup> Marshall Burke, "The Global Economic Costs from Climate Change May Be Worse Than Expected," 2015, <https://www.brookings.edu/articles/the-global-economic-costs-from-climate-change-may-be-worse-than-expected/>. accessed January 13, 2024.

<sup>6</sup> Daya Shankar Tiwari, "Carbon Trading: A Tool to Control Global Warming," *International Journal of Health Sciences* 6, no. S1 (2022): 5713–22, <https://doi.org/https://doi.org/10.53730/ijhs.v6nS1.6246>.

<sup>7</sup> Article 6.2 of the Paris Agreement provides a framework for the linkage of bilateral and multilateral emissions trading schemes and states that: "Parties shall, when engaging voluntarily in cooperative approaches involving the use of internationally transferred mitigation proceeds towards nationally determined contributions, encourage sustainable development and ensuring environmental integrity and transparency, including in governance, and shall apply robust accounting to ensure, inter alia , the avoidance of double counting, in accordance with the guidelines adopted by the Conference of the Parties which serves as the assembly of the Parties to this Agreement."

calculated and given a certificate called Certified Emission Reduction (CER). This certificate is what is traded, so it is known as Carbon Trading.<sup>8</sup>

Carbon trading has been implemented in many countries, including the European Union, Australia, New Zealand, South Korea, Japan, China, South Africa, Singapore and Chile. In Southeast Asia, all countries ratified the Paris Agreement.<sup>9</sup> However, carbon trading is relatively new in the ASEAN region so that currently the mechanism has not yet been established or implemented optimally. In addition, the Southeast Asia region does not have a climate change mechanism or policy to jointly reduce the emissions levels of these countries.<sup>10</sup>

This article is related to and complements previous research. These include an article by Duong Binh Nguyen, et.al., entitled "Insights from ASEAN-wide emissions trading schemes (ETSs): A general equilibrium assessment" in the Energy Policy journal. This article has similarities with that article, namely that they both examine emissions trading at the ASEAN level, but the difference is the subject matter, this article presents an explanation of the principles of emissions trading (ETS) while this article discusses policies in each ASEAN country.<sup>11</sup> Another article by Wilda Prihatiningtyas, et.al., entitled "Justice Perspective in Carbon Trading Policy in Indonesia as an Effort to Overcome Climate Change" in the journal Legal Reflections: Journal of Legal Science. This article discusses a smaller perspective, namely Indonesia, while this article, apart from discussing carbon policy in Indonesia, also compares it with policies in ASEAN countries.<sup>12</sup>

Based on the problems above, before achieving these expectations, it is important to examine the extent of development of carbon trading policies in ASEAN countries. This article contains efforts to explore policies from all countries in Southeast Asia (ASEAN). After that, try to compare it with the carbon trading policy in Indonesia. The final hope is that the findings from the results of this short research can provide an analytical overview and information for readers in general and specifically for the Indonesian government to continue to improve mechanisms for controlling climate change through economic instruments.

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<sup>8</sup> Zoar Reinhard Heidy Jane, Gabriella Gianova, Linny Firdaus, "Permasalahan Dalam Pelaksanaan Tiga Mekanisme Fleksibel Dalam Protokol Kyoto," *Bina Hukum Lingkungan* 3, no. 1 (2018): 13–33, <https://doi.org/https://doi.org/10.24970/bhl.v3i1.70>.

<sup>9</sup> Regina Betz, et.al., *The Carbon Market Challenge: Preventing Abuse Through Effective Governance* (United Kingdom, 2022), <https://doi.org/https://doi.org/10.1017/9781009216500>.

<sup>10</sup> Duong Binh Nguyen, et.al., "Insights from ASEAN-Wide Emissions Trading Schemes (ETSs): A General Equilibrium Assessment," *Energy Policy* 178 (2023): 113583, <https://doi.org/https://doi.org/10.1016/j.enpol.2023.113583>.

<sup>11</sup> *Ibid.*

<sup>12</sup> Wilda Prihatiningtyas, et.al., "Perspektif Keadilan Dalam Kebijakan Perdagangan Karbon (Carbon Trading) Di Indonesia Sebagai Upaya Mengatasi Perubahan Iklim," *Refleksi Hukum: Jurnal Ilmu Hukum* 7, no. 2 (2023): 163–86, <https://doi.org/https://doi.org/10.24246/jrh.2023.v7.i2.p163%20-%20186>.

## B. Research Methods

As a method or tool to study the objects in this research, a legal research method is used. The legal research used in this article is normative legal research, namely research carried out by examining statutory regulations/positive law using library materials or secondary materials. The materials are analyzed and compared.<sup>13</sup> This can be seen in the main object studied in this paper, namely carbon trading policies in ASEAN countries. In a broad sense, the policy in question can be in the form of statutory provisions and also executive government decisions. Thus, the appropriate research approaches to be used in this research are the statutory approach and the comparative approach.

## C. Research Findings and Discussions

### Overview: Carbon Trading Policy in ASEAN Countries

The ten countries of the Southeast Asian bloc, the Association of Southeast Asian Nations (ASEAN), are all parties to the Paris Agreement. With a population of around 700 million people and rapidly increasing energy consumption needs, ASEAN countries have an important role in efforts to deal with climate change to reduce greenhouse gas (GHG) emissions towards a net-zero economy by 2025. Collectively, the countries -ASEAN countries have a target to generate 23% of their primary energy from renewable sources by 2025, compared to 9.4% in 2014. In 2022, some of the largest renewable energy capacity expansions in Southeast Asia occurred in Indonesia, Thailand, and Vietnam.<sup>14</sup>

The ASEAN region faces a large emissions gap regarding its contribution to the 1.5°C pathway. If ASEAN countries want to fully implement unconditional commitments and under nationally determined contributions, the ASEAN region needs to increase GHG emission reductions by 2030 by 60% and 44% to achieve these targets.<sup>15</sup> Carbon can be a driver for realizing greater NDC ambitions, as seen in Article 6 of the Paris Agreement which encourages cooperation. Additionally, the cost-effectiveness of carbon markets can provide incentives to the private sector and help remove political barriers to strengthening commitments.

The ASEAN region has great potential in carbon trading and its contribution globally in tackling climate change. Southeast Asia has the world's most valuable investable carbon reserves. Leaving aside the questions that arise regarding avoided deforestation in this region, this is a major source of potential carbon offsets. To find out more fully about carbon trading

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<sup>13</sup> Peter Mahmud Marzuki, *Penelitian Hukum*, Edisi Revisi (Surabaya: Prenada Media Group, 2017), h. 29.

<sup>14</sup> Michael Lawson, et.al., "Developing Carbon Trading Markets in Southeast Asia," 2023, <https://www.kwm.com/cn/en/insights/latest-thinking/development-of-carbon-trading-markets-in-southeast-asia.html>. accessed January 15, 2023

<sup>15</sup> The Association of Southeast Asian Nations (ASEAN), *ASEAN State of Climate Change Report: Current Status and Outlook of the ASEAN Region Toward the ASEAN Climate Vision 2050* (Jakarta: ASEAN Secretariat, 2021), [https://asean.org/wp-content/uploads/2021/10/ASCCR-e-publication-Correction\\_8-June.pdf](https://asean.org/wp-content/uploads/2021/10/ASCCR-e-publication-Correction_8-June.pdf).

policies in all ASEAN countries, they are described in detail in the following table:

**Table 1. Carbon Trading Policy in ASEAN Countries**

No	Country	Policy Type		Explanation
		Law	Apart from the Law	
1	Singapura	Carbon Pricing Act 2018 (No. 23 of 2018). Amendments have been made in 2022 (the Carbon Pricing (Amendment) Act 2022)	Carbon Pricing Regulations on Registration and General Matters, 2018 Carbon Pricing Regulations on Composition of Violations, 2018 Carbon Pricing Regulations on Measurement, Reporting and Verification, 2018 Carbon Pricing Regulations on Carbon Tax and Carbon Credit Registration, 2020 Carbon Pricing Regulations on Appeal, 2020	Carbon trading in Singapore refers to the main law on carbon determination. This law regulates many things including carbon tax and carbon credits. Then several implementing regulations ( <i>Subsidiary Legislation</i> ) were formed which were issued by the Ministry of Sustainability and Environment & the Ministry of Environment and Water Resources. In addition to the regulations mentioned, there are regulations that relate generally to carbon, for example the Air Navigation (Carbon Emissions And Reporting) Regulations 2022 (by the Civil Aviation Authority of Singapore, with the approval of the Minister of Transport) and the Road Traffic (Carbon Emission Tax) Regulations 2012 (by Minister of Transportation).
2	Malaysia		Climate Change Master Plan 2015-2050, Ministry of Natural Resources and Environment National Guide to Voluntary Carbon Market Mechanisms, Ministry of Environment & Water Sarawak Government <i>Gazette</i> Part II. Forestry Regulations Forest (Forest Carbon Activity), 2022. Vol.	Policies regarding carbon trading are not found at the law level, but in Malaysia there are laws relating to climate change such as the Renewable Energy Act 2011 (currently amended by the Renewable Energy (Amendment) Act 2023 (Act A1689)) and the Sustainable Energy Development Authority Act 2011.



				LXXVII, 2022 No. 84.	Carbon trading regulations are found at the ministerial policy level, in the form of action plans/guidelines. Regulations were also found in states such as Sarawak.
3	Philippines	Climate Change Act of 2009 (Republic Act No. 9729 of 2009).		<i>National Climate Change Action Plan (NCCAP) 2011-2028</i> DAO-2021-43 Guidelines on Establishing a Carbon Calculation, Verification and Certification System (CAVCS) for Forest Carbon Projects, Department of Environment & Natural Resources	In addition to current regulations, the regulations that regulate most carbon trading are regulated in the Law Promoting a Low Carbon Economy, Establishing Emission Trading Goals and Systems and Implementation Mechanisms to Achieve National Climate Targets (Low Carbon Economy Law of 2023) . The status of this law is still under discussion. Apart from that, in climate change control policies, the Philippines has issued more policies in the form of the National Climate Change Strategy Framework (2010-2022), the 2019 National Climate Risk Management Framework, and the 2020 Sustainable Finance Policy Framework.
4	Vietnam	Law 72/2020/QH14 concerning Environmental Protection, 139'20/OG	No. 133-	Decision no. 896/QD-TTg dated 26 July 2022 concerning Approval of the National Climate Change Strategy Until 2050 Decision no. 06/2022/ND-CP on greenhouse gas (GHG) reduction, ozone layer protection and carbon market development in Vietnam Prime Minister's Decree Number 419/QD-TTg dated 5	The Environmental Protection Law in Vietnam also regulates general matters relating to carbon credits and carbon markets, especially domestically. Regarding carbon trading, it can be found in several policy regulations.

			<p>April 2017 concerning approval of a national program for reducing greenhouse gas emissions through mitigating deforestation and forest degradation; conservation and enhancement of forest carbon stocks and sustainable management of forest resources until 2030</p> <p>Decision no. 1775/QD-TTg dated 21 November 2012 concerning the Prime Minister's approval of greenhouse gas emissions management projects; managing carbon credit business activities to the world market</p> <p>Government Decree Number 107/2022/ND-CP dated 28 December 2022 concerning Pilot Emission Reduction Transfer and Financial Management Based on Emission Reduction Payment Agreements for the North Central Region</p>	
5	Thailand	Community Forestry Act B.E. 2562	<p>Climate Change Master Plan (CCMP) 2015-2050</p> <p>20 Year National Strategic Plan (2018-2037)</p> <p>Alternative Energy Development Plan 2018-2037</p>	<p>Provisions regarding carbon trading can be found in the Community Forest Law. This law regulates carbon credits as well as forest conservation policies. However, on the other hand, there are structural problems that arise, such as the risk of excessive carbon credit claims, companies having conflicts with the interests of communities</p>

around the forest. Apart from that, there is also something related, namely Thailand's Climate Change Bill which is currently in the discussion process.

Other provisions relating to carbon trading in Thailand are often found at the policy level in the form of the National Plan.

6	Myanmar	Environmental Conservation Act (2012)	Act	Myanmar Climate Change Strategy and Master Plan 2018-2030 Myanmar Sustainable Development Plan 2018-2030	Carbon trading regulations are not specifically found at the law level. The Environmental Conservation Law in Myanmar regulates carbon control in principle. Specific carbon trading regulations can be found in several National Plan type policies.
7	Brunei Darussalam			Brunei Darussalam National Climate Change Policy (2020) Brunei Darussalam Economic Blueprint (2021)	Carbon trading arrangements can be found at the national policy level which can be seen in target 6 concerning Carbon Pricing. At the law level there are no provisions that specifically regulate carbon trading.
8	Laos	Lao Forestry Law (rev. 2019)	Law	Laos National Green Growth Strategy to 2030 Agriculture and Forestry Research Strategy 2025 and 'Vision to 2030'	The Lao Forestry Law does not specifically regulate carbon trading, but it does regulate several matters relating to climate change and of course forest users. The regulations regarding carbon trading can be found at the policy level in the National Strategy.
9	Cambodia	Land Law (2001) Forestry Law (2002)		National Strategic Plan for Green Economic Growth 2013-2030 National Forestry Program (2010 - 2029)	Carbon trading regulations are specifically regulated at the National Plan policy level. On the other hand, there is Government Decree No. 699 of 2008



		Government Decree No.699 of 2008	which stipulates how the benefits of REDD+ credit sales should be distributed to stakeholders and used to expand new REDD+ locations.
10	Timor Leste	Timor-Leste National Climate Change Policy (2022) Timor-Leste Strategic Development Plan 2011-2030	Timor-Leste is starting to draft a Climate Change Law in 2022, a law that will eventually accommodate general carbon trading regulations. Currently, the implementation of carbon trading can be found at the level of national policy or national plan.

It can be seen in the table above that currently, countries in ASEAN regulate carbon trading mostly at the Subsidiary Legislation level such as government regulations or related ministry regulations. In addition, it was found that many carbon trading arrangements were formulated at the policy level as outlined in the National Plan, Action Plan, National Strategy, National Policy. Of the 10 countries in ASEAN, only **Singapore** accommodates carbon trading regulations at the statutory level, in this case the Carbon Pricing Law. This law regulates many things including carbon taxes and carbon credits. The carbon trading arrangements contained at the legal level provide a strong basis for guaranteeing the policies under it.

This has been proven in practice, Singapore's readiness to carry out carbon trading is proven by Singapore as a pioneer of the carbon credit program in the ASEAN region. In 2019, Singapore introduced a carbon tax law, and in 2021, launched a global carbon market called Climate Impact X (CIX). In CIX there are 2 features, namely, the carbon market (CIX Project Marketplace) and carbon exchange (CIX Exchange).<sup>16</sup> Singapore's Carbon Pricing Act further strengthens its carbon trading policy. After the enactment of the law, Singapore can increase the price of carbon credits to S\$25 per ton starting in 2024, and S\$46 per ton starting in 2026. This will be accompanied by increasing the carbon tax rate and the price of carbon credits at a fixed price. In addition, Singapore is offering a transition to give companies impacted by emissions-intensive trading more time to adjust to a low-carbon economy, and gives companies the option to offset 5% of taxable emissions.

<sup>16</sup> Renard Siew, "The Untapped Potential of Carbon Credit Trading in ASEAN," 2023, <https://fulcrum.sg/the-untapped-potential-of-carbon-credit-trading-in-asean/>. accessed January 14, 2023

Increased carbon taxes and the ability to offset emissions will help develop carbon trading activities in Singapore and the wider region.<sup>17</sup>

**Malaysia** has submitted an updated NDC, and made an unconditional commitment to reduce overall carbon intensity (to GDP) by 45% by 2030 compared to a baseline year of 2005.<sup>18</sup> Malaysia initiated the formation of the Bursa Carbon Exchange (BCX) in March 2023, which is owned and operated by Bursa Malaysia. This is a spot exchange that bridges carbon credit trading through standardized carbon contracts. The Malaysia Stock Exchange aims to do more than just operate a carbon exchange, but wants to help develop the carbon services ecosystem in Malaysia. A carbon project in the Malaysian state of Sabah is currently undergoing verification under the VERRA (Verra Certified Units) carbon standards program, which is expected to result in the issuance and offering of Malaysia's first carbon credits as early as the end of this year.

In terms of policy, the closest thing to regulating carbon trading is the National Guidelines on Voluntary Carbon Market Mechanisms. In addition, currently In addition, the Malaysian Ministry of Energy and Natural Resources published the National Forest Carbon Market Guidelines 20, while the Ministry of Environment and Water is preparing carbon market guidelines and a carbon pricing policy to provide clear guidance for those who wish to get involved in carbon market voluntary activities.

Although it has not yet committed to a net-zero target, based on its Paris Agreement pledge, the **Philippines** stated that it aims to reduce carbon emissions by 75% from business-as-usual conditions by 2030. The Philippine government has adopted a comprehensive climate policy agenda, including a National Strategy Framework for Change Climate (2010-2022), National Climate Change Action Plan (2011-2028), Philippine Development Plan (2017-2022), Philippine Energy Plan (2018-2040), Philippine National Security Policy (2017-2022), Management Framework National Climate Risk in 2019, and Sustainable Finance Policy Framework in 2020. A comprehensive climate policy agenda is integrated into the Philippine Development Plan.

There is pending legislation regarding the Low Carbon Economy Bill that establishes provisions for a domestic cap and trade system. The bill will establish a cap-and-trade system for the industrial and commercial sectors, administered by the Philippine Department of Environment and Natural Resources (DENR) and the Department of Trade and Industry. An entity that exceeds GHG emissions limits in any calendar year will pay double the market price for excess emissions, and the proceeds will be donated to a "Climate Reinvestment Fund" for activities specifically addressing global

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<sup>17</sup> Sean Douglas Tseng, "Appraising Singapore's Carbon Tax Through the Lens of Sustainability," 2022, <https://law.nus.edu.sg/apcel/wp-content/uploads/sites/3/2022/01/APCEL-WPS-2201.pdf>. accessed January 15, 2023

<sup>18</sup> Robin Goon Dhaartshini, Lim Kah Yau, Nat Zhai, "Breaking Down Malaysia's Climate Commitments," 2021, <https://myclimate.org/2021/10/04/7886/>. accessed January 15, 2023

warming.<sup>19</sup> So, up to now, carbon trading still refers to the Climate Change Law.

**Vietnam** has submitted its latest NDC, and made an unconditional commitment in the form of reducing total GHG emissions by 9% from BAU levels in 2030 and a conditional commitment in the form of reducing BAU by 27% in 2030 with international support.<sup>20</sup> Vietnam has passed the Environmental Protection Law which addresses four major environmental challenges, namely decarbonization through a carbon pricing mechanism, reducing GHG emissions through a carbon pricing instrument (to help realize the potential of renewable energy and the transition to a low-carbon development model), increasing revenue through a carbon pricing mechanism and encourage greener and cleaner technological innovation to reduce GHG emissions, and implement a carbon pricing framework to increase the attractiveness of Vietnam's foreign direct investment.

The law provides a foundation for the development of a carbon market in Vietnam to address existing environmental and development challenges. Based on the new environmental protection legislative instrument, Vietnam will establish regulations regarding the management and exchange of carbon credits and the operation of domestic carbon trading platforms in 2027 and will regulate the official operation of domestic carbon trading platforms and international carbon trading activities in 2028. In addition meanwhile, there are policies related to carbon trading issued by Prime Minister's Decree.

**Thailand** has submitted an updated NDC and made an unconditional commitment to a 20% reduction in total GHG emissions from BAU levels by 2030 and a conditional commitment to a 25% BAU reduction by 2030 with international support<sup>30</sup>. In August 2021, the Energy Policy Council National approved the concept of Thailand's Carbon Neutrality by 2065–2070, and tasked the Ministry of Energy to immediately conduct a study on a carbon neutral economy that will be submitted for approval in 2022.

Prior to COP26, Thailand had introduced a voluntary carbon market in the form of various government-implemented schemes. Since 2013, the Thai government has introduced a voluntary national carbon offsetting program (Thailand Carbon Offsetting Program), which encourages public and private organizations to calculate their carbon footprint and purchase carbon credits to offset unavoidable emissions, as well as the provision of voluntary GHG credits domestic. In 2015, a voluntary emissions trading scheme (Thailand Voluntary Emission Trading Scheme) was launched as a pilot for testing and developing national system infrastructure.<sup>21</sup>

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<sup>19</sup> Institute for Global Environmental Strategies, *Private Sector Perspectives on Carbon Pricing Instruments in ASEAN* (Japan: Institute for Global Environmental Strategies (IGES), 2020), [https://www.iges.or.jp/en/publication\\_documents/pub/policyreport/en/12265/Private+Sector+Perspectives+on+Carbon+Pricing+Instruments+in+ASEAN+for+web+2.pdf](https://www.iges.or.jp/en/publication_documents/pub/policyreport/en/12265/Private+Sector+Perspectives+on+Carbon+Pricing+Instruments+in+ASEAN+for+web+2.pdf).

<sup>20</sup> Thang Nam Do & Paul J. Burke, "Carbon Pricing in Vietnam: Options for Adoption," *Energy and Climate Change* 2 (2021): 100058, <https://doi.org/https://doi.org/10.1016/j.egycc.2021.100058>.

<sup>21</sup> Kultida Bunjongsiri, "Personal Carbon Trading, Carbon-Knowledge Management and Their Influence on Environmental Sustainability in Thailand," *International Journal of Energy Economics and Policy* 10, no. 6 (2020): 609–16.

In March 2021, Thailand's National Climate Change Committee approved Thailand's draft Climate Change Law which sets out the potential establishment of a mandatory emissions reporting scheme and related data disclosure. The draft has now been completed, and according to reports, the draft will be submitted to the cabinet for approval in 2023. However, until now the bill has not been passed. In addition, in implementing carbon trading, regulations at the statutory level in Thailand refer to the Community Forest Law.

**Myanmar** submitted its Intention Nationally Determined Contribution (INDC) in September 2015. Although the country has not set an overall economy-wide mitigation target, the INDC outlines a number of policies and targets that could lead to a reduction in GHG emissions. This includes increasing the share of hydroelectric power supply to 9.4 GW in 2030 and realizing potential electricity savings of 20% in 2030 from increasing energy efficiency in industry.<sup>22</sup>

Myanmar's main policy documents related to climate change, some of which are identified in the NDC document, such as National Environmental Policy, Myanmar Climate Change Policy, Myanmar Climate Change Strategy and Master Plan 2018-2030, Green Economy Strategic Framework (2017). In addition, at the legal level, the current implementation of carbon trading still refers to and must not conflict with the Myanmar Environmental Conservation Law (2012).

**Brunei Darussalam** regulates carbon trading principally in the National Climate Change Policy (2020) containing clear strategies, action plans and achievements with the aim of achieving a sustainable, low carbon and climate resilient country. In the policy document, target 6 is about Carbon Pricing.

Brunei's National Climate Change Policy 2020 outlines ten state strategies to combat climate change that focus on reducing industrial emissions, forest cover, electric vehicles, renewable energy, electricity management, carbon pricing, waste management, climate resilience and adaptation, carbon inventory, and awareness and education. The climate change policy was developed after Brunei recorded its highest number of forest fires in 10 years and rising temperatures. The policy aims to reduce Brunei's greenhouse gas emissions by more than 50 percent by 2035.

**Laos** regulates carbon trading in its National Green Growth Strategy. Laos' National Green Growth Strategy to 2030 is an elaboration of the 10th Party Congress Resolution, Vision 2030, 10-Year Strategy (2016-2025) and the 8th Five-Year National Socio-Economic Development Plan (2016-2020) in detail. The main aim and objective of the formulation and implementation of this Strategy is to develop the potential for integrating green growth into the formulation and implementation of sectoral and local strategies and plans in each period to ensure the achievement of long-term national socio-

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<sup>22</sup> The Republic of the Union of Myanmar, "Myanmar Climate Change Strategy (2018 – 2030)," 2019, [https://myanmar.un.org/sites/default/files/2019-11/MyanmarClimateChangeStrategy\\_2019.pdf](https://myanmar.un.org/sites/default/files/2019-11/MyanmarClimateChangeStrategy_2019.pdf). accessed January 13, 2023

economic goals. development determined by the Party and the Government, such as: graduating from least developed country (LDC) status in 2020 and moving towards becoming a developing country with upper middle income in accordance with the green and sustainable direction and achieving the Sustainable Development Goals (SDGs) by 2030 quality. In addition, with regard to the implementation of carbon trading at the legal level, it currently refers to and must not conflict with the Lao PDR Forestry Law (rev. 2019).

**Cambodia** has set a clear direction in its climate action. Following the Nationally Determined Contribution (NDC) update in 2020, Cambodia submitted an ambitious Long-Term Strategy for Carbon Neutrality to the Paris Agreement and became the first country in the Association of Southeast Asian Nations (ASEAN) to submit a strategy with a 2050 target. Historical emissions from deforestation of 50% by 2030 are at the heart of the mitigation targets set by Cambodia, representing almost 60% of their overall NDC targets. By 2050, Cambodia estimates the forestry sector will be a significant carbon sink.<sup>23</sup> To support all this, Cambodia has formulated many strategic policies such as the National Strategic Plan for Green Economic Growth 2013–2030. Apart from that, of course it is also related to statutory level policies, such as the Land Law and Forestry Law which must not be violated.

Since **Timor-Leste** submitted its first NDC, the Government of Timor-Leste has formalized national institutional arrangements for an integrated response to climate change risks, and some necessary policies have been implemented and some responsible stakeholders can access environmental and climate funds to respond to climate change issues in that country. In terms of carbon trading, currently Timor-Leste is proposing two main policies, namely the Timor-Leste National Climate Change Policy and the Timor-Leste Strategic Development Plan 2011-2030. Apart from that, Timor-Leste is currently also discussing the Draft Climate Change Law which will later become the main reference for the implementation of climate change mitigation including carbon trading in it.

### Comparing Carbon Trading Policy with Indonesia

Indonesia has ratified the Kyoto Protocol through Law Number 17 of 2004 concerning Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UU No. 17/2004). Indonesia also participated in the 2015 Paris Agreement which resulted in a Nationally Determined Contribution (NDC). Followed by Law Number 16 of 2016 concerning Ratification of the Paris Agreement on the United Nations Framework Convention Concerning Climate Change.<sup>24</sup>

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<sup>23</sup> Manuth Buth, “Financing Forest-Sector Climate Solutions Through Carbon Markets: The Case of Cambodia,” 2022, <https://www.undp.org/cambodia/blog/financing-forest-sector-climate-solutions-through-carbon-markets-case-cambodia>. accessed January 14, 2023

<sup>24</sup> Indah Dwi Qurbani, et.al., “The Ideal Concept of Energy Control in Indonesia from the Economic Constitution Perspective,” *Jurnal Pembaharuan Hukum* 9, no. 3 (2022): 481–502, <https://doi.org/http://dx.doi.org/10.26532/jph.v9i3.17429>.



Indonesia has the potential for forest wealth that can overcome global warming with an area of more than 120 million hectares. The composition of the area is divided into three parts, 18% is national park, 25% is protected forest, and the remaining 57% is production forest. Based on Indonesia's National Determined Contribution/NDC, the contribution to reducing emissions from the forestry and other land uses (FOLU) sector is 59.76 percent or 714 million tonnes of Co<sup>2</sup> equivalent.<sup>25</sup>

In its development, Indonesia was recorded as the country with the best achievements among the 16 partner countries of Japan's Joint Crediting Mechanism (JCM). This is proven by Indonesia's achievements in the form of carrying out 106 feasibility studies and implementing 22 JCM projects. This project covers 15 emission source sectors with a total estimated emission reduction of 320,000 tons of carbon dioxide per year. Apart from that, the first 3 JCM projects registered in the world came from Indonesia. To date, the implementation of the JCM project in Indonesia has succeeded in obtaining grant funds from the Japanese government amounting to USD 40 million and raising additional investment in low carbon development amounting to USD 70 million.<sup>26</sup>

As one of the largest emitters and coal producers in the world, Indonesia has taken active steps to develop its domestic carbon market. In particular, the country has launched a voluntary carbon market and is considering a regulated emissions trading market. It is recorded that Indonesia currently has many regulations in the field of carbon trading, including more or less:

**Tabel 2. Regulations in Indonesia related to Carbon Trading**

Type	Regulations
Laws	<p>Law Number 4 of 2023 concerning Development and Strengthening of the Financial Sector</p> <p>Law Number 17 of 2004 concerning Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (Kyoto Protocol to the United Nations Framework Convention on Climate Change)</p> <p>Law Number 16 of 2016 concerning Ratification of the Paris Agreement to the United Nations Framework Convention on Climate Change (Paris Agreement to the United Nations Framework Convention on Climate Change)</p> <p>Law Number 7 of 2021 concerning Harmonization of Tax Regulations</p>
Presidential Decree	<p>Presidential Regulation Number 98 of 2021 concerning Implementation of Carbon Economic Value to Achieve Nationally Determined Contribution Targets and Control of Greenhouse Gas Emissions in National Development</p>
Ministerial Regulation/Head of Institution at the same level	<p>Minister of Energy and Mineral Resources Regulation Number 16 of 2022 concerning Procedures for Implementing the Economic Value of Carbon in the Electric Power Generation Subsector</p>

<sup>25</sup> Wilda Prihatiningtyas, et.al., *Op.Cit.*, p. 164

<sup>26</sup> Kenny Cetera, "Recognition of Forest Carbon Rights in Indonesia: A Constitutional Approach," *Lentera Hukum* 9, no. 1 (2022): 151–76, <https://doi.org/https://doi.org/10.19184/ejlh.v9i1.29331>.



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Minister of Environment and Forestry Regulation Number 21 of 2022 concerning Procedures for Implementing the Economic Value of Carbon

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Minister of Environment and Forestry Regulation No. 7 of 2023 concerning Procedures for Carbon Trading in the Forestry Sector

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Financial Services Authority Regulation Number 14 of 2023 concerning Carbon Trading Through the Carbon Exchange

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Indonesia has passed Law no. 7/2021 which introduces a carbon tax for activities that produce CO<sub>2</sub> emissions above a fixed limit. The carbon tax regime, which applies in addition to the Regulation 98 regime, will be implemented in stages at a rate not less than the CO<sub>2</sub> equivalent carbon market price or IDR. 30 per kilogram CO<sub>2</sub> equivalent (~US\$2.11 per tonne).<sup>27</sup> Following this, on April 4 2022, the Director General of Taxes officially announced the issuance of the 14 implementing regulations. As part of the implementing regulations, a carbon tax is expected to be applied to coal-fired power plant operations from 1 April 2022 onwards. However, these early-stage elements of the proposal have been delayed pending further guidance from government and it is understood the carbon tax regime as a whole may not be fully operational until at least 2025.<sup>28</sup>

In October 2021, Indonesia is targeting a reduction in GHG emissions and is committed to achieving NDC by issuing Presidential Regulation Number 98 of 2021 concerning the Implementation of the Economic Value of Carbon (Perpres No. 98/2021) to achieve the national contribution target and control of GHG emissions in relation to national development.

Presidential Decree No. 98/2021 is a legal product with a broad scope that includes the regulatory framework for carbon pricing and trading. Based on this Presidential Decree, the Indonesian government will use carbon economic value (CEV) as a tool for mitigation and adaptation to climate change. CEV can be implemented through carbon trading, economic incentives, carbon levies or other mechanisms determined by the Minister of Environment and Forestry depending on developments in science and technology (including detailed tracking and assessment of CEV under a national recording called SRN PPI).<sup>29</sup> Presidential Decree No. 98/2021 regulates 2 carbon trading mechanisms, firstly emissions trading (cap and trade, which applies to business sectors that are subject to greenhouse gas emission limits (or emission ceilings) set by the government/relevant ministry), and secondly, GHG emission offsets (for businesses/entities in sectors that do not have GHG emission limits/limits).

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<sup>27</sup> Ilham Dwi Rafiqi, "Pembaruan Politik Hukum Pembentukan Perundang-Undangan Di Bidang Pengelolaan Sumber Daya Alam Perspektif Hukum Progresif," *Bina Hukum Lingkungan* 5, no. 2 (2021): 320–21, <https://doi.org/https://doi.org/10.24970/bhl.v5i2.163>.

<sup>28</sup> Abdul Jalil, "Global Warming Dan Carbon Trading Perspektif Fiqh," *Jurnal Pemikiran Islam* 12, no. 1 (2012): 195–218, <https://doi.org/http://dx.doi.org/10.21154/al-tahrir.v12i1.53>.

<sup>29</sup> SRN PPI is a web-based system for managing, providing data and information about actions and resources for Climate Change Mitigation, Climate Change Adaptation and Economic Value of Carbon (NEK) in Indonesia.

In addition, Minister of Environment and Forestry has issued implementing regulations, namely Minister of Environment and Forestry Regulation Number 21 of 2022 concerning Procedures for Implementing the Economic Value of Carbon (MEF regulations No. 21/2022). This regulation further regulates, among other things, procedures for implementing carbon trading activities, implementing national carbon recording (SRN PPI), and verification procedures. Apart from that, there are others such as Minister of Environment and Forestry Regulation No. 7/2023. As for carbon trading through the carbon exchange, the Financial Services Authority has issued OJK regulation Number 14 of 2023 as a follow-up to Law Number 4 of 2023 concerning Development and Strengthening of the Financial Sector, it is necessary to stipulate a Financial Services Authority Regulation concerning Carbon Trading through the Carbon Exchange.

Currently, Indonesia does not yet have a Law on Climate Change which regulates carbon trading. However, currently there is a Draft Law on Climate Change Management which is being discussed in parliament. It is hoped that this article will provide some information about comparative carbon trading policies in ASEAN countries for legislators. The most important thing is that the law will not only regulate climate change mitigation but also regulate carbon trading like other countries in ASEAN.

#### **D. Conclusions**

ASEAN countries have great potential in carbon trading and their contribution globally in tackling climate change. Comparison results, of the 11 ASEAN member countries, it is known that more often accommodate carbon trading regulations at the subsidiary legislation level, such as government regulations/relevant ministry regulations and policy levels as outlined in the National Plan, Action Plan, National Strategy, National Policy. Of the 11 ASEAN countries, only Singapore regulates carbon trading at the statutory level (Carbon Pricing Act). Then it has two levels of subsidiary legislation and policies used by Malaysia, Philippines, Vietnam, Cambodia. Meanwhile, countries that only have regulations at the policy level include Thailand, Myanmar, Brunei Darussalam, Laos and Timor Leste. Indonesia has extraordinary potential in carbon trading because it has adequate legal and institutional instruments. However, compared to other countries, Indonesia should start preparing a Draft Law on Climate Change as has been done by several countries. This aims to ensure that carbon trading provisions are in line with and in line with the development of national law based on Pancasila and the 1945 Constitution of the Republic of Indonesia.

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