Unlocking the billion-dollar CORSIA potential in ASEAN

Opportunities for **governments**, **airlines** and wider **stakeholders**

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Acknowledgements

Boeing
Dr. Kimberly Camrass
Sharmine Tan
Heather Sheffer
Joseph Ellsworth

GenZero
Anshari Rahman
Puar Si Liang
Alexandros Metzler

Abatable
Juan Carlos Arredondo Brun
Bryan McCann
Valentina Hernandez Gomez
Alejandro Limon Portillo
Greg Lydka Morris
Stephania Bohorquez
Marc Height
Kate Taylor

Members of the Expert Advisory Committee
Aung Soe Moe, ASEAN Secretariat
Joel Gould, BeZero
Ellery Sutanto, Climate Impact X
Marshall Brown, Global Green Growth Institute (GGGI)
Charlie Pool, Howden
Kelvin Lee, International Air Transport Association (IATA)
Björn Fondén, International Emissions Trading Association (IETA)
Philip See Yew Jin and Rahimah Farjan Ali, Malaysia Aviation Group
Sapra Shradha, OCBC
Boris Mak and Esther Ho, Singapore Airlines
Chandra Shekhar Sinha, World Bank

Additional contributors including:
All Nippon Airways
Air Asia
Air New Zealand
Artio, Bilal Hussain
Bridge Carbon, Minh Tran and Bindi Arundhuti
Conservation International, Anirudh Krishnan
Glencore, Caspar Chiquet and Louis Wang
EVA Air
Japan Airlines Co., Ltd.
OKA, Chris Slate and Stewart Duncan
Verra, Win Sim Tan
Vietnam Airlines
Virgin Australia

Opening remarks

At Boeing, we see this topic as highly relevant not only to carbon market development, but to the broader sustainability trajectory of aviation. As the industry works on fleet renewal, scaling Sustainable Aviation Fuel, improving operational efficiency, and advancing new technologies, a credible and well-supplied CORSIA market remains a critical component of the transition.

What happens in ASEAN matters far beyond the region. The ability of ASEAN countries to contribute eligible supply at scale will influence not only compliance readiness for airlines, but also confidence in the integrity, liquidity, and practical functioning of the wider CORSIA market.

This report highlights a central reality: market integrity and supply availability must advance together. Without timely authorizations, corresponding adjustments, and policy clarity, eligible supply will remain constrained. Yet with effective coordination, ASEAN has the potential to play a globally significant role in strengthening CORSIA implementation and expanding access to high-quality units.

For Boeing, this matters because the credibility of the CORSIA market has implications well beyond compliance. It affects airline planning, investor confidence, host country participation, and the overall pace of aviation decarbonization. A functioning CORSIA market can help bridge the gap while other decarbonization pathways continue to scale, providing the sector with a practical and disciplined mechanism to manage emissions in the near term.

This report is intended to give each stakeholder a clear and actionable starting point for translating potential into result. Its findings reinforce the importance of policy alignment, institutional coordination, and market transparency across the CORSIA ecosystem.

Allison Melia
Vice President, Global Enterprise Sustainability, Boeing

Aviation is one of the hardest sectors to decarbonize. Yet, making it more sustainable is an economic imperative given aviation's strategic importance to global trade, the movement of people, and broader economic development.

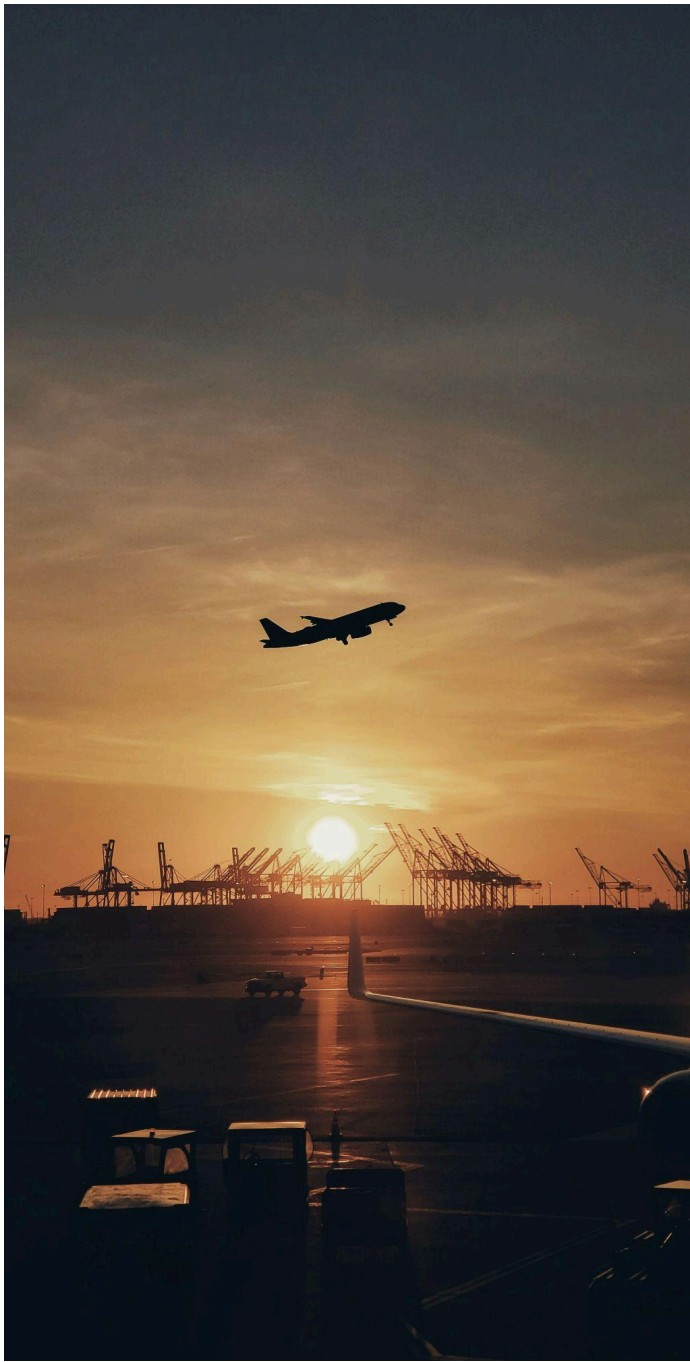
Achieving net-zero aviation will require every credible solution available, from more efficient aircraft and operational improvements to the rapid scale-up of Sustainable Aviation Fuel (SAF) and high-integrity carbon markets. GenZero has invested in different solutions to decarbonize aviation.

For ASEAN, CORSIA presents a significant economic and climate opportunity. The region is home to some of the world's most promising and untapped mitigation potential and is steadily building the policy foundations needed to participate in international carbon markets.

Our analysis indicates that ASEAN's supply could generate between US$1.6-8.5 billion in economic value and support nearly 32,000 jobs over the next decade, while delivering wider social, environmental, and sustainable development benefits. ASEAN's progress on Article 6 and NDC implementation means this opportunity is no longer theoretical; it is within reach. Yet the reality remains striking. Despite its potential, to-date only four CORSIA-eligible projects have been authorized across the region, representing 7.1% of global eligible supply. The challenge now is not one of potential, but of execution.

This report provides a practical starting point for that work. By setting out the region's supply potential, market dynamics and areas for action, it aims to support governments, airlines and related market participants in translating ASEAN's CORSIA opportunity into credible climate and economic outcomes.

Frederick Teo
CEO, GenZero



International civil aviation has set a clear goal: achieve carbon-neutral growth to 2035. CORSIA is how the sector intends to get there, and it is fast becoming one of the most consequential compliance carbon markets in the world.

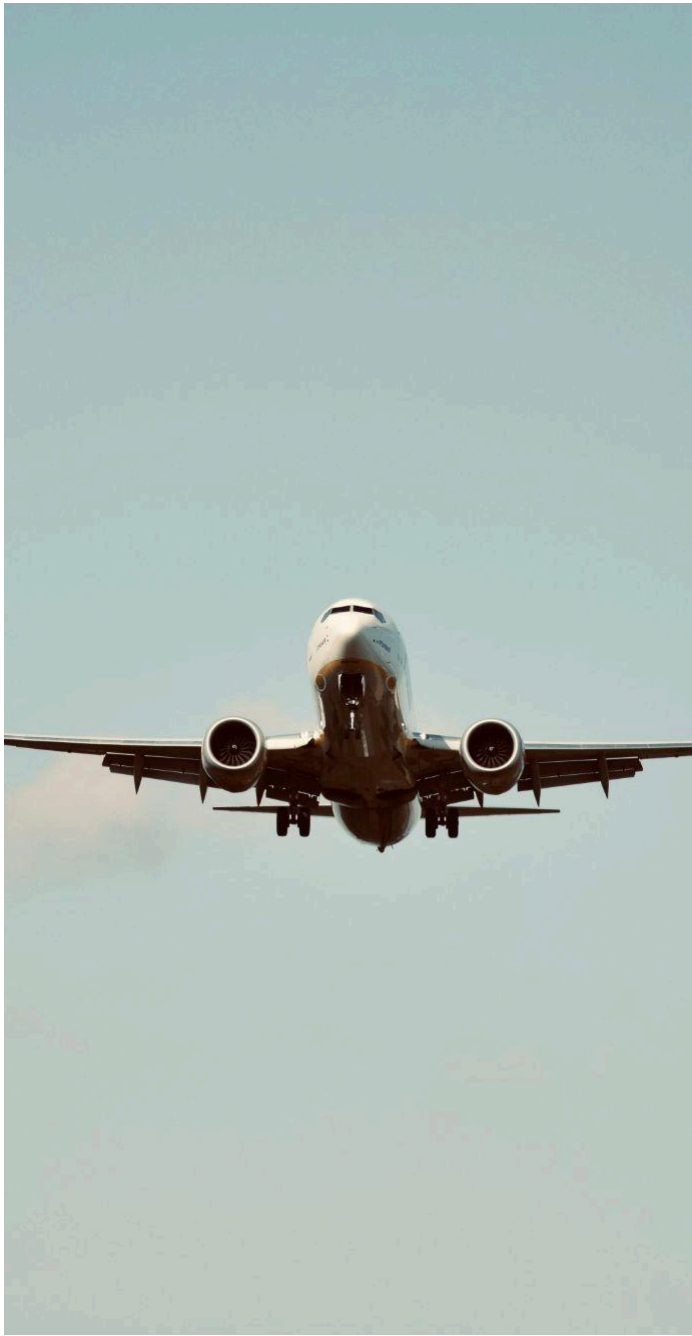
Today that ambition runs ahead of the scheme's available carbon credit supply. Collectively, airlines face close to 200 million tons of demand across CORSIA's First Phase, increasing to 1.2-1.8 billion tons from 2027 to 2035, while only about 40 million eligible units exist worldwide. ASEAN can help close that gap.

The region holds one of the largest reserves of potential supply. Beyond the units already eligible today, ASEAN's carbon projects and pipeline could deliver hundreds of millions more over the next decade, worth billions to the economies that host them. What unlocks this is specific and achievable: investors bringing the new wave of projects, host countries authorizing units in step with their own climate goals, airlines signaling demand early, and the wider market building the infrastructure to match supply with need.

This report is designed to help make that path concrete. Its analysis is based on a database of over 5,300 carbon projects and modeled supply and demand across the region, and it features views from the airlines, governments, developers, insurers, and other stakeholders who will shape this market.

My thanks to Boeing and GenZero for their partnership, all the study participants for their valuable inputs, and Singapore Airlines and Malaysia Aviation Group for agreeing to be featured in this report. The CORSIA opportunity is ASEAN's to take, and this report charts the path forward.

Valerio Magliulo
CEO and Co-founder, Abatable



Glossary

ACE	Aviation Carbon Exchange	Centralized marketplace for airlines purchasing CORSIA-eligible units. An IATA solution powered by CBL Markets.
ACR	American Carbon Registry	Carbon crediting standard approved by ICAO as CORSIA eligible for issuing CEEUs.
ARR	Afforestation, Reforestation and Revegetation	Nature-based project type generating credits by establishing or restoring forests. Eligible under several CORSIA-approved standards.
ART TREES	Architecture for REDD+ Transactions – REDD+ Environmental Excellence Standard	Carbon crediting standard approved by ICAO as CORSIA eligible for issuing CEEUs.
ASEAN	Association of Southeast Asian Nations	Regional political and economic intergovernmental organization dedicated to promoting peace, regional stability, and economic cooperation across Southeast Asia. ASEAN comprises eleven member states: Brunei Darussalam (Brunei), Cambodia, Indonesia, Lao People's Democratic Republic (PDR), Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam.
BTR	Biennial Transparency Report	Countries' periodic report to the UNFCCC documenting national GHG emissions, progress towards NDC, policies and measures, and other information related to the implementation of the Paris Agreement. The primary mechanism for formally recording Letters of Authorization and corresponding adjustments under the Paris Agreement.
CAEP	Committee for Aviation Environmental Protection	ICAO Committee for Aviation Environmental Protection, which sets environmental standards for aviation, including criteria for CORSIA eligibility.
CAR	Climate Action Reserve	Carbon crediting standard approved by ICAO as CORSIA eligible for issuing CEEUs.
CATS	Carbon Assets Tracking System	Emissions reductions transaction system designed and implemented by the World Bank to support the issuance and transactions of emission reduction units issued by World Bank programs.
CCR	CORSIA Central Registry	ICAO-managed database used by ICAO member states to submit CORSIA-specific information and a data registry recording all CEEUs authorized and retired under CORSIA.

CDM	Clean Development Mechanism	Kyoto Protocol crediting mechanism used to stimulate sustainable development and emissions reductions via emission reduction projects in developing countries. The mechanism is discontinued and no longer issues certified emission reductions.
CEEUs	CORSIA Eligible Emissions Units	Carbon credits meeting all ICAO eligibility conditions for CORSIA compliance, including host country authorization for CORSIA use and a corresponding adjustment. CEEUs can be purchased and retired immediately against an airline's CORSIA obligation.
CMA	Conference of the Parties serving as Meeting of the Parties to the Paris Agreement	Body that oversees the implementation of the Paris Agreement, including all decisions on Article 6 related to cooperative approaches to enhance mitigation ambition.
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation	Global market-based mechanism requiring qualifying airlines to offset CO2 emissions exceeding the CORSIA baseline by purchasing and retiring eligible credits (CEEUs).
DNA	Designated National Authority	Government body appointed to manage a country's Article 6 participation, including authorizations on internationally transferred mitigation outcomes and participation approvals.
EDMS	Emissions Data Management System	ICAO system collecting verified emissions data from airlines to calculate individual CORSIA obligations.
GCC	Global Carbon Council	Carbon crediting standard approved by ICAO as CORSIA eligible for issuing CEEUs.
HFLD	High Forest, Low Deforestation	ART TREES carbon program type generating credits from jurisdictions with high forest cover and low historic deforestation.
IATA	International Air Transport Association	Global trade association representing over 370 airlines worldwide, supporting CORSIA by providing compliance guidance to airlines, boosting CORSIA EEU supply through the Supporting Alliance, and facilitating carbon credit procurement through the Aviation Carbon Exchange (ACE) platform.
ICAO	International Civil Aviation Organization	UN specialized agency administering CORSIA, approving eligible crediting standards, and publishing the SGF annually.
IFM	Improved Forest Management	Forestry project type generating credits by changing management practices to increase carbon stocks above a business-as-usual baseline.
ITMOs	Internationally Transferred Mitigation Outcomes	Mitigation units transferred between countries under Article 6.2 and/or Article 6.4 of the Paris Agreement. CEEUs authorized for CORSIA are a form of ITMO.
JETP	Just Energy Transition Partnership	Bilateral financing arrangement to accelerate coal phase-out and scale renewable energy in developing countries.

LoA	Letter of Authorization	Attestation issued by a host country authorizing the use of carbon credits towards international mitigation purposes, including CORSIA. LoAs are expected to follow UNFCCC guidance on authorizations agreed at COP 29. A Letter of Authorization commits the host country to apply a corresponding adjustment on the units used for CORSIA to avoid double claiming with national emissions inventories.
MRV	Monitoring, Reporting, and Verification	System for tracking, reporting, and independently verifying emissions reductions. A prerequisite for NDC accounting and carbon credit issuance.
MtCO2	Million tons of carbon dioxide equivalent	Standard unit of measurement for emissions and credit volumes throughout this report.
NDC	Nationally Determined Contribution	A country's climate commitment under the Paris Agreement. Units authorized for CORSIA cannot simultaneously count toward the host country's NDC, requiring a corresponding adjustment.
OIMPs	Other International Mitigation Purposes	Article 6 category of unit use under which host countries may authorize carbon credits for international use, which may cover CORSIA authorizations depending on national frameworks.
OTC	Over The Counter	Bilateral carbon credit trading between buyer and seller directly, without an exchange. Most CORSIA transactions occur OTC.
REDD+	Reducing Emissions from Deforestation and Forest Degradation	Framework for crediting reduced deforestation, sustainable forest management, and enhancement of forest carbon stocks. Eligible under ART TREES and VCS.
SAF	Sustainable Aviation Fuel	Non-fossil aviation fuel with lower lifecycle emissions than conventional jet fuel. A primary decarbonization tool for airlines, complementing CORSIA offsetting obligations.
SGF	Sectoral Growth Factor	ICAO's annual factor applied to each airline's emissions to determine its CORSIA offsetting obligation, based on sector-wide emissions growth relative to the baseline.
TAB	Technical Advisory Body	ICAO body that makes recommendations to ICAO's Council on the eligible emission units for use by the CORSIA.
UNFCCC	United Nations Framework Convention on Climate Change	The international treaty under which the Paris Agreement was adopted aimed at stabilizing the concentration of greenhouse gases in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.
VCM	Voluntary Carbon Market	Market for carbon credits purchased voluntarily, as distinct from compliance markets. VCM credits may become CEEUs if they meet ICAO eligibility criteria and are authorized by their host country.
VCS	Verified Carbon Standard	Carbon crediting standard approved by ICAO as CORSIA eligible for CEEUs.

Executive summary

The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)[1] is one of the most important compliance carbon markets in the world. With the objective of allowing international civil aviation to achieve carbon-neutral growth to 2035, the scheme relies on the issuance of carbon credits that comply with detailed criteria set by the International Civil Aviation Organization (ICAO), a specialized agency of the United Nations, along with host countries authorizing them for their use in CORSIA.

Airlines subject to the scheme's 2024–2026 compliance period (the First Phase) must compensate over 55 MtCO2 for their 2024 emissions. The expected total demand sits close to 200 MtCO2 for the First Phase, with airlines in ASEAN likely to require 17 to 18 million CORSIA-Eligible Emission Units (CEEUs) across this period.

Even though the global volume of CEEUs available has nearly doubled since Q3 2025 to 36.6 MtCO2 by 01 June 2026[2], there remain concerns over whether the scheme will deliver sufficient supply on time for airlines to fully comply with CORSIA obligations.

By mid-2026, ICAO had approved ten carbon crediting standards for supplying CEEUs for CORSIA's First Phase. Carbon credits become CEEUs if they meet two key sets of criteria:

1. **Meeting CORSIA requirements**: A carbon credit must be issued under an approved crediting standard using an approved methodology, meet the applicable project crediting start date, and have units with the required credit vintage.
2. **Avoid double claiming via a corresponding adjustment**: A carbon credit must have a Letter of Authorization (LoA) by the host country for use in CORSIA. The authorization comes with the host country's commitment to properly account for it via a corresponding adjustment of national emissions balance, preventing a double claiming of the underlying emissions reductions and removals against the country's Nationally Determined Contribution (NDC)[3].

Authorization of carbon credits by host countries for use in CORSIA is a major factor limiting additional CEEU volumes becoming available, putting CORSIA compliance at risk.

[1] This report focuses on the CORSIA-eligible Emissions Unit (CEEU) aspect of this market, rather than CORSIA-eligible Fuels (CEF). Any references to CORSIA or the 'CORSIA market' should be read as such.

[2] ICAO maintains an up to date view of CEEUs per eligible standard and host country. Data is available at: https://www.icao.int/CORSIA.

[3] Host countries agree not to use the underlying emissions reduction towards their national Paris Agreement climate target (NDC) by applying a corresponding adjustment (CA) for the first transfer of the authorized units. A CA is applied when the host country adjusts its emissions reductions metrics for the first transfer of the units, discounting the authorized volumes from mitigation counted towards an NDC to prevent double counting of CEEUs.

Alternatively, when a host country issues a Letter of Authorization (LoA), it commits to apply a CA and communicate its application in a future Biennial Transparency Report. If a carbon credit has received an LoA and the CA has not been applied yet, the standard may require the project to purchase insurance against the revocation of this commitment.

For simplicity, unless otherwise necessary, this report will refer to host countries "authorizing" units to cover both cases.

The CORSIA economic potential for ASEAN

The members of the Association of Southeast Asian Nations (ASEAN) could take a leading role in addressing the supply challenge and seizing the **US$1.6 to US$8.5 billion** potential economic opportunity CORSIA has to offer.
CORSIA-eligible supply: The region already hosts four carbon projects[4] based in Cambodia and Lao PDR that have issued 2.6 million CEEUs, which represents 7.1% of eligible supply as of 01 June 2026, but only 1.3% of total expected demand for the First Phase. If these projects extend their operation and maintain their performance, they could bring an **extra 6-20 million units** in the next decade.

CORSIA-aligned supply: An additional set of 54 projects hosted in the region are aligned with CORSIA requirements, but lack an LoA from their host country. If their issued units were authorized for CORSIA use, these projects could increase ASEAN supply by an additional 18.2 million units for CORSIA's First Phase, a volume that could become immediately available for airlines. Similarly, if the CORSIA-aligned projects extended their life to 2035, they could bring an **additional 5-26 million units**.

The currently eligible 2.6 million units have a market value of US$26-59 million, based on recent market prices. If the additional 18.2 million issued units were authorized **over the next 18 months**, these could become eligible and bring an additional market value between **US$182 and US$419 million**[5].

Beyond the economic value, this expanded capacity would provide an important addition to the global pool of eligible credits, addressing estimated compliance needs from CORSIA-covered airlines worldwide.

[4] VCS 2924 - Grouped Projects for Laos Improved Cookstove; VCS 3204 - Grouped Projects for Laos Water Purifier; VCS 2925 - Grouped Projects for Cambodia Improved Cookstove; VCS 3052 - Grouped Projects for Cambodia Water Purifier.
[5] CEEUs market prices have fluctuated between US$10 and US$23 per tCO2 over last 8 months.

The existing and the aligned supply – totaling 20.8 million units – could be sufficient to enable ASEAN airlines to cover the entirety of their expected 17-18 million ton offset obligations in the First Phase.

CORSIA-aligned pipeline supply: ASEAN-based supply could further scale by another 302 million units by the end of CORSIA's Second Phase (2035), through a pipeline of 100 new carbon projects under development whose credits could be authorized for CORSIA.

In total, **ASEAN could supply up to 348 million CEEUs** over the next decade across current CORSIA-eligible units, aligned units already issued but not yet authorized (CORSIA-aligned supply), and units that could come from the emerging pipeline of carbon projects. These CEEUs could have a combined economic value between **US$1.6 billion and US$8.5 billion** at today's market prices, to be captured in the next 8-10 years.

When assessing the CORSIA opportunity, host countries need to consider whether authorizing this level of credits for CORSIA would impact the achievement of their respective NDCs for 2030 and 2035. In many cases, the materiality of authorizations may be very low or negligible relative to the mitigation ambition of a country. However, host countries need clarity on whether the CEEUs come from activities already considered for their NDCs or if these are additional to the policies and measures for the NDC.

Benefits to host countries: If ASEAN member states proceeded with authorizations of additional units for CORSIA, they could also capture significant additional socioeconomic benefits, given the composition of project types in the region.

Activities to date report reduced indoor air pollution and reduced likelihood of gastrointestinal diseases in millions of households, greater conservation of natural resources, economic savings in households from reduced fuel use and improved health, and better education and training opportunities for local communities. The existing and incoming projects serving CORSIA have the potential to generate nearly **32,000 new direct jobs** in the next decade and could attract additional investment.

Recommendations for ASEAN member states, airlines and stakeholders in the region

Although concerns about limited supply persist, demand signals from CORSIA-participating airlines, including those in ASEAN, would bolster the market and incentivize the development of more carbon projects and the issuance of additional units. In turn, additional mitigation action and increased volumes of verified emissions reductions could provide a positive setting for authorizations from host countries that are on track to meet or outperform their NDCs.

Piloting CORSIA transactions, including the retirement of units for compliance, is a step forward. Several airlines have started to do so. Earlier in 2026, Singapore Airlines (along with its subsidiary Scoot) retired 150,000 CEEUs for CORSIA compliance purposes. Malaysia Aviation Group (MAG)[6] has conducted several purchasing pilots and developed a clear procurement framework. Outside of ASEAN, other airlines have retired CORSIA-eligible units, including Japan Airlines (250,200 CEEUs)[7] and All Nippon Airways (1,000 CEEUs)[8].

Many more airlines are exploring conditions in the market and are still devising their own procurement processes to meet CORSIA compliance

[6] Malaysia Aviation Group is a global aviation organization, under which sits Malaysia Airlines, which is the airline with CORSIA obligations. Procurement decision-making happens at both the parent MAG and Malaysia Airlines level. For simplicity, this report will refer to MAG in its entirety.
[7] A total of 180,100 CEEUs from VCS and 70,100 CEEUs from ART TREES.
[8] A total of 1,000 CEEUs from ART TREES.

requirements and timelines; piloting transactions can help refine their approach.

Airline recommendations

Airlines currently preparing for CORSIA compliance are following some or all of the following steps for a successful engagement with the market:

1. **CORSIA engagement strategy**
    a. Develop a clear CORSIA procurement approach involving cross-functional coordination (e.g. legal, finance, sustainability, risk management).
    b. Assess the interactions between CORSIA compliance with other sustainability and emissions reductions and compensation or offset efforts or initiatives.
    c. Assess and build internal capabilities and expertise needs on CORSIA.
    d. Estimate and approve a budget to cover airline exposure

2. **CORSIA procurement process**
    a. Conduct pilot transactions to test the engagement strategy, cross-functional coordination, and the internal procedure leading to unit purchase and retirement.
    b. Understand additional project requirements and CEEU labeling processes and timing for time-bound piloting.
    c. Hedge risk through staggered procurements and diversified sourcing of CEEUs and CORSIA-aligned units.
3. **Demand aggregation for market access**
    a. Collaborate with partners to share best procurement practices and enhance CORSIA capabilities.
    b. Connect and maintain dialogue on CORSIA needs with government agencies overseeing transport, environment, and finance, particularly in cases where a country hosts CORSIA-aligned supply.

Government recommendations

There are six recommendations for ASEAN member states to authorize units and apply corresponding adjustments without creating a risk to NDC achievement:

1. **Map and assess CORSIA-aligned supply in the territory against NDC measures and national emissions sources**. A lack of detailed visibility on the connection between carbon projects with national emissions sources and expected decarbonization trajectories per source would reduce confidence for authorizations. A mapping of project types, NDC measures, and emissions sources would increase

the ability to accurately identify and forecast the amount of supply that could be authorized for CORSIA. Once the mapping is complete, issued units per activity type and sector and sectoral mitigation potential can be compared. This will help better understand the interaction between issued units per project type, the ambition of sectoral mitigation policies, and the materiality of authorizations, reducing or avoiding the risk of "overselling", where authorizing too many units could make the country unable to meet its NDC, should the underlying domestic measures not deliver the abatement needed.

2. **Establish cross-ministerial coordination for CORSIA to align key government departments**. The scheme's success relies on communication and coordination between the ministries responsible for NDCs (usually the environment or sustainable development ministries), line ministries responsible for implementing measures (e.g., energy, agriculture, forestry) and those charged with CORSIA (usually transportation ministries and civil aviation authorities). Increased coordination would surface the offset needs of domestic airlines subject to the scheme and the prospects of CORSIA-aligned and CORSIA-eligible supply from the country. Limited interaction could hinder the ability to simultaneously meet international civil aviation and climate goals.

3. **Define and prioritize target sectors and activity types where CORSIA project investment would be welcome**. This means identifying emissions sources and the types of emission reduction activities that could be prioritized in the country (e.g. create a "positive list" of priority activities) and where authorizations could be issued without risking NDC achievement. Under-served sectoral priorities or emissions sources may be a starting point. Similarly, areas with mitigation potential that lack an allocated national budget could be prioritized for additional investment and expanded mitigation efforts.

4. **Harness CORSIA as a source of revenue and investment to fund mitigation activities and other sustainable development benefits**. CORSIA projects can draw investment into the country, which helps finance mitigation activities and creates other benefits such as job creation and improved health outcomes. Countries could set policies that help realize such benefits, for instance with requirements for local employment and safeguards for benefit sharing. In addition, revenue from administrative fees can become a revenue source to help finance additional climate actions in the country. Such policy considerations should be incorporated in the development of project positive lists and benefit-sharing plans, and can contribute to getting support from line ministries if they know what they are getting in return.

5. **Pilot authorizations with initial volumes that signal an intention to support CORSIA**, particularly in areas that bring much-needed investment and where benefits beyond carbon are palpable and desired. Pilot authorizations could be implemented for a percentage of units issued by a CORSIA-aligned project. As additional projects are initiated and additional verified reductions occur, volumes authorized for CORSIA use could be increased.

6. **Collaborate with other ASEAN member states to facilitate the regional supply of CORSIA-eligible units**, while agreeing to support each other on the achievement of members' NDCs. Regional cooperation for enhanced ambition is in the spirit of the Paris Agreement and could lead to additional inflows of carbon and climate finance.

Stakeholder recommendations

In addition to airline and government actions, other market stakeholders, including sectoral associations, carbon project developers, eligible standards, insurance providers, and market intermediaries, can also contribute to unlocking CORSIA supply through:

1. **Expanding collaboration and coordination** between governments, multilateral organizations, and sectoral bodies to facilitate CORSIA- and Article 6-related capacity building activities, technical resources, and funding, particularly in relation to the interaction between both themes, the prospects and experiences with Article 6-guided authorizations, and the ways in which countries can achieve both their NDCs and the carbon-neutral growth of international civil aviation.

2. **Augmenting government capacity** to receive, review, and process authorizations and to develop national reports for the UNFCCC, including BTRs. Upon request by host countries, external stakeholders (such as multilateral and development support organizations) could facilitate engagement of national experts and early career professionals as technical personnel through internships, recent graduate schemes, and secondments to support line ministries conduct analytical work in support of CORSIA compliance and related UNFCCC reporting and transparency obligations.

3. **Facilitating greater transparency across the market** on incoming supply, including carbon projects' progress in meeting eligibility requirements, progress of obtaining host country authorizations, and CORSIA-eligible labeling.

4. **Clarify insurance uncertainties around guaranteeing no double claiming of units**. Carbon insurance policies cover for LoAs revocation risk, lack of corresponding adjustment, and the possibility of a unit losing its eligibility status due to double claiming. Carbon insurance providers may clarify airlines liability if purchased CEEUs lose their eligibility and there is a need to replace, substitute or compensate the units. They could provide additional clarity and case studies.

5. **Aligning on a standardized purchase agreement** to streamline contracting and investment.

Together, stakeholders across the CORSIA ecosystem can collaborate to scale this market and support meaningful climate mitigation.

Potential cumulative economic value in ASEAN **US$1.6-8.5 billion**			
CORSIA-eligible supply			
From issued volumes for the First Phase (CEEUs)	Global **36.6 MtCO2**	Total ASEAN **2.6 MtCO2**	Economic value in ASEAN **US$26-59 million**
Issuances forecast 2026-2035 (potential CEEUs)	**23-79 MtCO2**	**6-20 MtCO2**	**US$63-460 million** from additional volumes between 2026 and 2035
CORSIA-aligned supply			
From issued volumes for the First Phase (require LoA)	Global **338 MtCO2**	Total ASEAN **18.2 MtCO2**	Economic value in ASEAN **US$182-419 million**
Issuances forecast 2026-2035 (would require LoA)	**95-623 MtCO2**	**5-26 MtCO2**	**US$50-598 million** from additional volumes between 2026 and 2035
CORSIA-aligned pipeline supply			
Issuances forecast 2026-2035 (once issued, would require LoA)		Total ASEAN **133-302 MtCO2**	Economic value in ASEAN **US$1.3-7 billion**
First Phase total demand		Global **≅200 MtCO2**	From ASEAN airlines **17-18 MtCO2**

Introduction

Purpose and approach

The purpose of this report is to identify current bottlenecks to the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) market in the Association of Southeast Asian Nations (ASEAN)[9], and provide a set of recommendations to allow ASEAN member state governments to unlock the opportunities available from CORSIA compliance. This means both analyzing the state of supply in the region and engaging airlines to understand their needs and what is holding them back from engaging more fully in the market.

There are three key sets of information underpinning this analysis:

1. **Abatable analysis and desk research**
   Including analysis of current and expected conditions of supply and demand of CORSIA-Eligible Emission Units (CEEUs), globally and at the ASEAN level. The analysis is built on a comprehensive database of over 5,300 carbon projects from the ten CORSIA-approved standards; prospects of host country unit authorizations based on detailed climate policy profiles for all countries in ASEAN; emissions data for all airlines and routes subject to CORSIA compliance; and project-level supply assessment split by CORSIA-eligible, CORSIA-aligned, and pipeline of future CORSIA supply.

2. **Airline interviews**
   The authors interviewed airlines across ASEAN and the Asia-Pacific region to understand their views on CORSIA. Of these, Singapore Airlines (SIA) and Malaysia Aviation Group (MAG) are included as case study examples.

3. **CORSIA stakeholder interviews**
   Finally, this analysis is supported by input from an Expert Advisory Committee, along with views gathered through interviews with governments, registries, project developers, intermediaries, and insurance providers who participate in the CORSIA market.

While this study is focused on ASEAN, the recommendations are applicable globally, and the authors hope this work can support the carbon-neutral growth goals of international civil aviation. All facts and figures in this report are as of 01 June 2026.

CORSIA as a compliance market[10]

CORSIA is the global market-based instrument used by international civil aviation to achieve carbon-neutral growth to 2035. The scheme applies to all airplane operators (passengers and cargo) covering international flights on routes between participating countries.

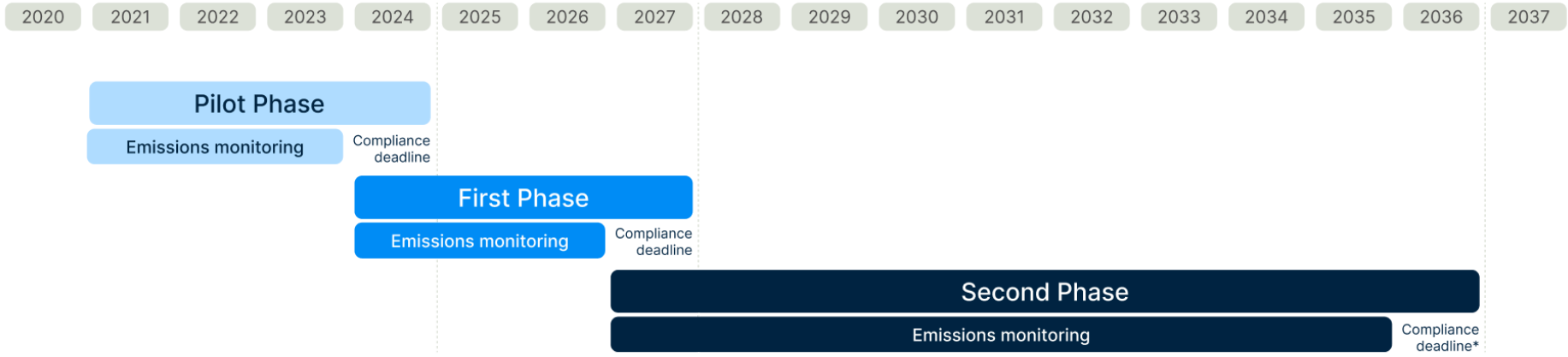
The scheme runs from 2021 to 2035, and is organized around three phases: a Pilot Phase (2021-2023), a voluntary First Phase (2024–2026) where states opt-in, and a compulsory Second Phase (2027-2035) including all International Civil Aviation Organization (ICAO) members (with some exclusions)[11] – see Figure 1.

[9] ASEAN comprises eleven member states: Brunei Darussalam (Brunei), Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam.

[10] Please see Annex 1 for a detailed description.

[11] There are two exclusions: 1) aviation-based: states with a very small share of global air traffic; and 2) socioeconomic: Least Developed Countries, Small Island Developing States, and Landlocked Developing Countries are automatically exempt regardless of traffic volumes. Some countries like Cambodia and Timor-Leste have opted-in voluntarily despite being under these categories.

Figure 1: CORSIA phases and compliance deadlines



*Unofficial deadline assumed off the back of the two-year extended compliance deadline observed for the Pilot phase and First Phase.

A total of 690 airplane operators from 130 countries participate in CORSIA's First Phase, including 39 airplane operators from eight ASEAN member states: Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam – see Annex 3 for the list of airplane operators.

From an operational perspective, airlines must purchase and retire CEEUs equal to an amount that compensates for emissions growth relative to a baseline defined by ICAO as 85% of international aviation emission levels in 2019. Offset obligation volumes will be communicated to an airline about ten months after the emissions year (e.g. in October 2025 for the compliance year 2024). In the First Phase, airlines have until January 31, 2028 to purchase and cancel volumes from their 2024–2026 compliance years.

For carbon credits or units to become eligible as CEEUs, they must meet seven key conditions, four for alignment with CORSIA rules and three for eligibility and labeling[12]:

ICAO conditions for supply to be CORSIA-aligned

1. The project issuing the units must be registered with a CORSIA-eligible standard or program. Currently, there are ten

[12] Source: CORSIA-eligible Emissions Units, ICAO, April 2026. For the list of exclusions per standard, check the latest ICAO '*CORSIA-eligible Emissions Units*' document.

approved standards for the First Phase, and four for the Second Phase.
2. The project's first crediting period must have started on or after 01 January 2016.
3. Projects must follow any methodology or protocol from the eligible standard, with the exclusion of some standard-specific exemptions.
4. Carbon credits issued by the project must represent emissions avoidance, reduction or removal that occurred from 01 January 2021 through 31 December 2026 for the First Phase or through 31 December 2029 for the Second Phase.

Once a project and its units are considered CORSIA-aligned, they still need to meet ICAO conditions on CORSIA labeling to be fully eligible as a CEEU. Until then, airlines can't purchase and cancel to meet CORSIA compliance:

ICAO conditions for supply to be CORSIA-labeled (CEEU) and eligible for compliance

5. Carbon credits must have been authorized by the host country for use towards CORSIA or Other International Mitigation Purposes.
6. Information on the authorized units and their corresponding adjustment for the first transfer must be included in national reports to the UNFCCC, where a national report could be an Annual Information Report or a Biennial Transparency Report (BTR).
7. If the authorizations and units have not yet been communicated by the host country, then projects must obtain a guarantee against the risk of double-counting, covering authorization revocation. The guarantee may be an insurance policy or a contribution to a buffer pool that covers for this risk, which must be effective at least until the standard or program has verified that the corresponding adjustment has been applied[13].

Only when all the conditions are met, a carbon credit may be labeled as a CEEU in the registry system of the respective eligible standard or program and canceled by an airline operator towards compliance.

Authorizations under Article 6[14] and CORSIA readiness

Authorization and proper accounting of units is fundamental to the integrity of the CORSIA scheme as it prevents the double counting of an emissions reduction or removal from being used by both an airline for CORSIA obligation and by the country itself toward Nationally Determined Contribution (NDC). ICAO's criteria for CORSIA eligibility do not cover the mechanics of such authorization, but rely on the guidance for Article 6.2 cooperative approaches agreed under the UNFCCC by parties to the Paris Agreement[15].

Authorization mechanics

The authorization of units under the Paris Agreement's Article 6 must be considered within the context of a country's NDC. Emissions reductions or removals that are authorized for international purposes cannot be used by a host country to meet its own climate targets and, as such, host governments have to balance their own NDC achievement with capturing the opportunity of CORSIA and other international compliance markets.

[13] ICAO. Clarifications of TAB's Criteria Interpretations Contained in TAB Reports. Version: November 2025.
[14] Please see Annex 5 for a detailed description.
[15] ICAO. Clarifications of TAB's Criteria Interpretations Contained in TAB Reports. Version: November 2025.

Unit authorizations for CORSIA use are granted by governments, with the authorization function often sitting in the ministry responsible for environmental or sustainable development affairs, and regularly allocated to the office acting as Designated National Authority (DNA) for Article 6 of the Paris Agreement. As per ICAO resolutions and CORSIA criteria, the authorizations are expected to follow the COP29 Article 6 decisions on countries' authorization of internationally transferred mitigation outcomes[16].

To engage effectively in the opportunity to authorize units for CORSIA under Article 6, while recognizing their own NDC targets, host country governments may need additional institutional capacity, frameworks, and procedures. Within ASEAN, member states show varying levels of engagement with Article 6 to date, which can impact where CORSIA supply will come from in the region.

In general, countries that have made progress on setting up their participation in Article 6 of the Paris Agreement and that hold previous experience with the Clean Development Mechanism may be better prepared to start CORSIA unit authorization processes.

More than half of ASEAN member states (see Figure 2) have adopted an Article 6 framework that defines their engagement with cooperative approaches, and have progressed on the definition of an authorization process. Similarly, they have appointed an office as the Designated National Authority for Article 6, and have initiated work on bilateral cooperation under Article 6. Progress to date is encouraging and acts as a fertile ground to enable CORSIA-aligned supply to become eligible. The regional opportunity lies in concluding authorization procedures at the country level and piloting them for unit authorization. This has to be accompanied by further capacity to prepare Initial Reports on Article 6 and Biennial Transparency Reports that capture the application of corresponding adjustments.

A detailed breakdown of each ASEAN member state's NDC targets, Article 6 engagement, and domestic carbon project landscape can be found in the Technical Annex of this report.

[16] See COP-29 report and decisions on Article 6, in particular decision 4/CMA.6 on Matters relating to cooperative approaches referred to in Article 6, paragraph 2 of the Paris Agreement.

Figure 2: ASEAN Article 6 readiness for CORSIA supply

Favorable: in place and operational | In progress: under construction or partial | Opportunity: absent or constrained

Feature	Thailand	Cambodia	Vietnam	Laos	Singapore	Malaysia	Indonesia	Myanmar	Philippines	Brunei	Timor-Leste
Article 6 framework	ICC Guideline (Aug 2025)	Operations Manual (2024)	Decree 112/2026/ND-CP	Carbon Credits Decree, partial	ICC Framework under CPA 2022	NCMP (April 2026)	PR 110/2025; sub-regs pending	Framework not published	LCEA in draft; energy circular only	Framework not published	Framework in draft
Authorisation process	DCCE process; DG signs LoA	Four-stage process defined	25-day decision window	Process partial; no template	Four-stage via IAs	NRES pathway under NCMP	Forestry pathway only	Process ad hoc; bilateral only	Process limited to energy (DOE)	Process not established	Process not established
National registry	TCC Registry (TGO)	Under development	National Registration System (MAE)	CCIS mandated, not live	NEA registry in development	Under development	SRUK in development	Registry flagged, not built	Registry preliminary; not live	No registry; facility MRV only	No registry
DNA appointed	DCCE under MNRE	Ministry of Environment	MAE	Ministry of Agriculture and Environment	Not designated; buyer country	NRES	Ministry of Environment	MONREC Climate Change Division	DENR	BCCS within MoFE	Min. Tourism and Environment
Initial Report	Submitted; CH, JP scopes	Submitted; two activities	Not submitted	Status unconfirmed; transfers reported	Not submitted; pending first transfer	Not submitted	Not submitted	Not submitted	Not submitted	Not submitted	Not submitted
CORSIA units	T-VER approved; LoAs unconfirmed	VCS 3052 and 2925 listed	None available	VCS 2924, 3204 listed	None available	None labelled	None available	PACM eligibility pending ICAO	None labelled	None labelled	None issued
Corresponding adjustments	First CA applied (CH, 2024)	Not yet triggered	Formalised, not applied	Applied per BTR1	None inbound; expected 2026	None recorded	None recorded	None recorded	None recorded	None recorded	None recorded
LoAs issued	E-bus, JCM solar confirmed	Three issued, all CORSIA	None issued	Three in BTR1	Joint Committee co-authorisation	None issued	None issued	One (CCC cookstoves to KR)	None issued	None issued	None issued
Bilateral agreements	CH, JP, SG operational; NZ exploring	JP, KR agreements; SG MoU	JP, SG, KR agreements	JP JCM; SG MoU	Multiple IAs (Ghana, etc.)	SG MoU; JP in talks	JP JCM; KR, SG MoUs	JP JCM; KR project-level	JP, SG Article 6.2 agreements	SG MoU only	None identified

Note on Singapore: the country is a buyer under its International Carbon Credit framework. Its CORSIA-units row is N/A because the framework governs inbound ITMO procurement rather than host-country supply.

Country comparison matrix, as of May 2026

Host country challenges with authorization

Article 6 readiness can contribute to a greater participation of ASEAN countries in the CORSIA market. However, a lack of readiness could cause governments to face challenges in authorizing a greater supply of CORSIA units. These include:

1. Ministries responsible for NDCs aim to avoid a case where authorizing too many units could make the country unable to meet its NDC ("overselling"). Ministries prefer to delay any authorization conversations until getting a higher degree of confidence in the achievement of national targets.

2. Governments may also lack detailed visibility into their emissions sources (inventories) and expected decarbonization trajectories per source, thus limiting their ability to accurately forecast the amount of supply they can commit to authorize per activity type and overall.

3. There may also be limited coordination between the ministries responsible for NDCs (usually environment ministries)[17], line ministries responsible for implementing measures (a variety, including energy, agriculture, and forestry ministries) and those charged with CORSIA (usually transportation ministries and associated civil aviation agencies). This can hinder the ability of one ministry to support the other in meeting its goals.

4. Governments are made up of many different ministries and agencies, which may have competing interests. Usually, it is environment ministries that must reconcile across different sectors to manage a country's overall NDC. Line ministries (e.g. agriculture, forestry) can face different incentives. In some cases, environment ministries may wish to limit authorization to meet their NDC targets. Alternatively, they may be incentivized to push for more if they see authorization as a source of revenue through administrative fees. Line ministries may also tend to be more incentivized to support authorizations to draw investment into their sectors.

5. Finally, effectively administering NDCs and authorizing units is complex, and many environment ministries have limited capacity to design such systems. One technical challenge is differing timelines:
    a. NDCs are set on five-year periods (e.g. 2025-2030).
    b. CORSIA requires retirements on three-year cycles (e.g. after the 2024–2026 First Phase, then after 2027-2029, 2029-2032, and 2032-2035 in the Second Phase).
    c. LoAs each have their own duration (e.g. 2026-2031), which span multiple statutory timelines.

Environment ministries' accounting of emissions and mitigation progress is further complicated by forecasting across such timelines. For instance, with the majority of first NDCs set for 2030, it becomes complex to understand the impact that an authorization for mitigation that occurred in 2025 may have on the progress towards the NDC. The country's accounting of progress may not be on an annual basis, but rather in a time window that captures all the NDC policies and measures planned for the 2021-2030 period. A host country may wish to be conservative in how many units they authorize to reduce the chance of missing their NDCs. On the other hand, issuing an authorization may attract further investment and additional mitigation activity in the country, but there is no certainty of that, unless policies clearly incentivize additional mitigation.

[17] Specific government ministries, departments, agencies, or other bodies will vary based on country. In some cases, subnational governments will also be important. The body of this report uses general terminology; please refer to the technical annex for country-specific cases.

Authorization is dependent on two things: first, whether the host country requires the project as necessary to achieve its own NDC targets and thus cannot authorize the units for Article 6, which would require an adjustment to its emissions balance. Second, if it is willing to authorize the units for CORSIA, whether the country has developed the necessary institutional setup and capabilities to grant authorizations guided by decisions on Article 6.2.

Countries with more advanced capacity for engaging in Article 6 activities may be better positioned to issue authorizations earlier. Examples of such capacity include previous experience with international cooperation under Article 6; having a Designated National Authority (DNA) for Article 6 that oversees procedures; having enacted regulations that capture Article 6 responsibilities and procedures, including those for authorizations and corresponding adjustments; and having prepared and submitted a Biennial Transparency Report where authorizations and corresponding adjustments would be captured.

CORSIA market dynamics

ASEAN CORSIA supply

ASEAN has a significant opportunity as a supplier of CEEUs. However, it is important to expand the supply source beyond the currently eligible supply, into activities and volumes that would facilitate CORSIA compliance and NDC achievement over the next decade.

In that regard, this report distinguishes between three categories of supply, outlined in Table 1[18]:

- **CORSIA-eligible supply** (i.e. CEEUs) are those units that are already issued, have met all CORSIA conditions set out in the introduction, and are labeled in the respective registry of a CORSIA-eligible standard or program. These can be used immediately for CORSIA compliance.
- **CORSIA-aligned supply** refers to units that meet ICAO's eligibility criteria, but have not yet been authorized by their host country. These can only be used for CORSIA once they progress to CEEU status.
- **CORSIA-aligned pipeline projects** refers to listed carbon projects that meet ICAO's eligibility criteria as per conditions 1 to 4 outlined in the introduction, but have not yet issued any verified units. These projects have the potential to be a new source of supply for CORSIA, particularly for the Second Phase (2027 onwards).

[18] Supply for this report is analyzed project by project. Each project is analyzed based on its methodology and standard and their eligibility status under CORSIA. Each project's currently issued volumes, and forecast volume, is then aggregated into both ASEAN and global totals (see Annex 4 for the complete methodological description). To better reflect the uncertainty associated with issuance and authorization, aggregate figures are displayed as a range, representing conservative and optimistic scenarios.

Table 1: Global and ASEAN supply: eligible, aligned, and pipeline[19]

Eligibility status	Geography	Current issued supply (2024-May 2026)		Forecast supply (EOY 2026-2035)	
		Million CEEUs	# projects	Million CEEUs	# projects
CORSIA eligible	Global	36.6	57	23 - 79	57
	ASEAN	2.6	4	6 - 20	4
CORSIA aligned	Global	338	1,435	95 - 623	1,435
	ASEAN	18.2	54	5 - 26	54
CORSIA aligned pipeline projects	Global	NA	2,005	1,088 - 2,389	2,005
	ASEAN	NA	100	133 - 302	100

Source: Abatable

CORSIA-eligible supply

A total of 57 projects globally have issued 36.6 million CEEUs that can be used by airlines today for CORSIA compliance. A single project[20], ART102 in Guyana, accounts for 68% of this total with 24.8 million CEEUs (See Annex 2). The remaining units are distributed globally, but are primarily concentrated in

[19] Table 1 brings together the headline CEEU numbers referenced throughout the report. Across the three categories of supply, totals are split between ASEAN and global, separated by current issued supply and forecast supply. The forecast supply is a range including a conservative lower bound and an optimistic higher bound. ASEAN's CORSIA-eligible supply, for instance, stands at 2.6 million CEEUs today across four projects. It is forecast to reach between 6-20 million units from those same projects between 2026-2035.

[20] ART102 is properly referred to as a jurisdictional "program". However for simplicity this document will use the term "project" to encompass both programs and projects.

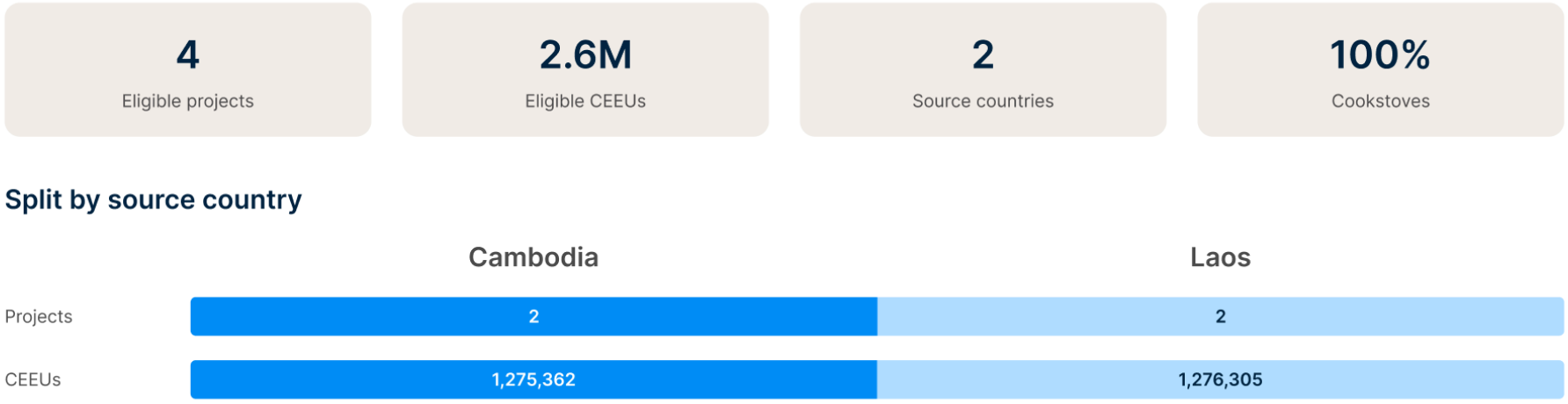
carbon projects located in sub-Saharan Africa, where 48 projects have issued 7.4 million CEEUs. By the end of the Second Phase, these 57 projects with CORSIA-eligible units could collectively issue between 23 and 79 million additional units.

Southeast Asia (ASEAN region) follows as the second-largest source of labeled supply, with 2.6 million units originating from four projects: two in Lao PDR and two in Cambodia, all focused on clean cookstoves and household devices (Figure 3).

The four projects based in ASEAN territory currently represent 7.1% of CORSIA-eligible supply globally (as of 01 June 2026). Across their lifetimes, these four projects are expected to issue an additional 6-20 million units by the end of the Second Phase, based on their lifetime, expected renewal of crediting periods, and performance to date. Each of these four projects has an LoA extending through 2032 or 2033 (depending on the project), enabling eligibility for these millions of additional units.

ASEAN is home to the only CORSIA-eligible national program, the Thai Premium T-VER , which hosts nine projects, but only one has issued a small volume of units.

Figure 3: Concentration of currently available CORSIA-eligible supply in ASEAN

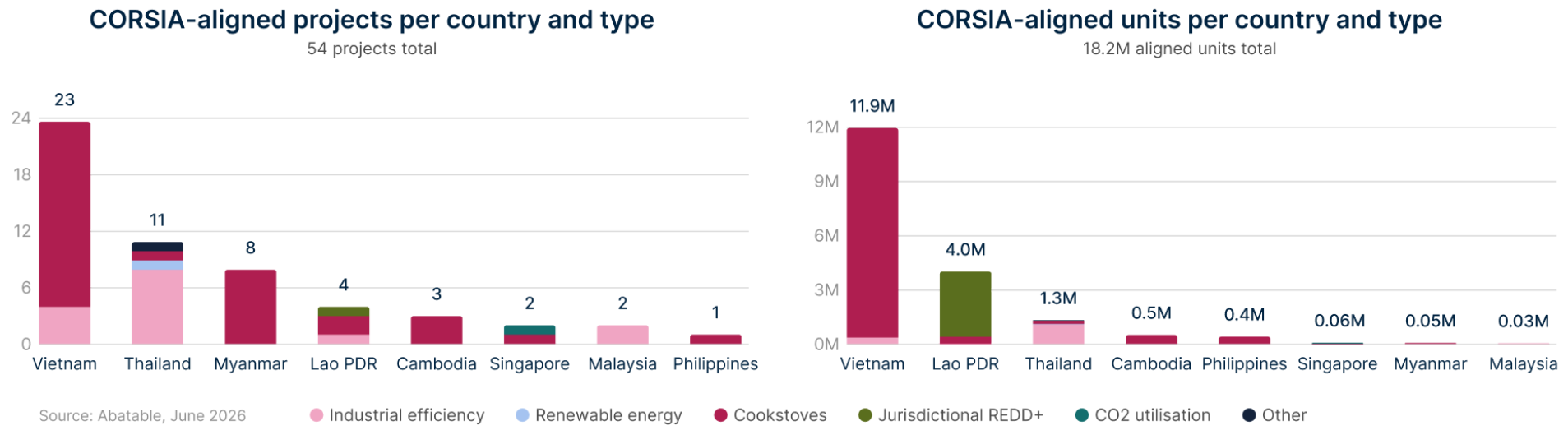


CORSIA-aligned supply

Globally, 1,435 projects meet all of ICAO's eligibility criteria, and their issued units could become CEEUs once authorized. This amounts to 338 million units issued to date that could potentially be eligible as CEEUs.

Of these 1,435 CORSIA-aligned projects, 54 are based in ASEAN countries and have already collectively issued 18.2 million units across eight countries (Figure 4). The projects located in Viet Nam, Lao PDR, and Thailand generate more than 90% of the CORSIA-aligned supply originated in the region. On a project-type basis, clean cookstoves predominate, representing 13.1 million units from 35 projects, primarily located in Viet Nam. The remaining units originate from jurisdictional REDD+ and industrial efficiency projects hosted in Lao PDR, Thailand and Viet Nam.

Figure 4: Concentration of CORSIA-aligned supply in ASEAN



Beyond the issued units and contingent on future issuance and authorization, the 54 CORSIA-aligned projects in ASEAN could bring an additional 5-26 million CEEUs by 2035. However, the authorization for some of these units is more likely to materialize than others.

CORSIA-aligned pipeline supply

CORSIA-aligned pipeline supply represents the ultimate opportunity to expand CORSIA's supply sources. A CORSIA pipeline represents a set of listed projects that meet ICAO's eligibility criteria in principle, have not yet issued verified units, and could do so within the next decade, on time for use in any of the incoming CORSIA compliance cycles to 2035. The projects in the pipeline may be at different stages of development, including a project in an early stage, or under validation but not yet registered for future verification. For the analysis, the main assumption is that any project listed in a CORSIA-eligible standard will do everything in its power to comply with the standard requirements for a successful validation and registration, and the subsequent issuance of units at a later stage.

Once these projects issue units, those units could become CEEUs if authorized by the host country. Globally, there are 2,005 projects in this pipeline, in a diverse set of crediting standards and geographical locations.

The ASEAN region hosts 100 such pipeline projects across nine countries. Viet Nam and Indonesia host more than half of these projects. Together, these 100 projects could issue between 133 and 302 million units by 2035.

As part of the 100-project pipeline, the Philippines concentrates the largest share of potential volume supplied, with 71% of the total (see Figure 5). Two projects in particular (VCS5080 and VCS3956) may bring over 23 million units per year, once they have completed their validation and registration stage, and become fully operational. However, projects following earlier methodologies may need to switch to more recent versions indicated by their respective standard.

For instance, the two projects in Philippines followed methodology VMR0006 version 1.2 in the early stage of their design; however, such methodology is now inactive and the projects must transition to VM0050 before being able to complete their validation and be in a position to generate any unit.

The change to a new methodology could also bring a more conservative estimation to potential unit issuance. If projects in the CORSIA-aligned pipeline were not successful in completing their validation, the region would rely on registered projects for the issuance of future units rather than all in the pipeline. In that case, the ASEAN region would rely only on 20 projects with an expected contribution close to 6.5 million units over the 2026-2035 period, a volume significantly lower than the expected 133-302 million units (see Figure 6). An expansion of the pipeline may be needed. Over the next decade, new projects may be developed, validated and registered, becoming a future and additional supply source.

Figure 5: Distribution of CORSIA-aligned project pipeline by project type

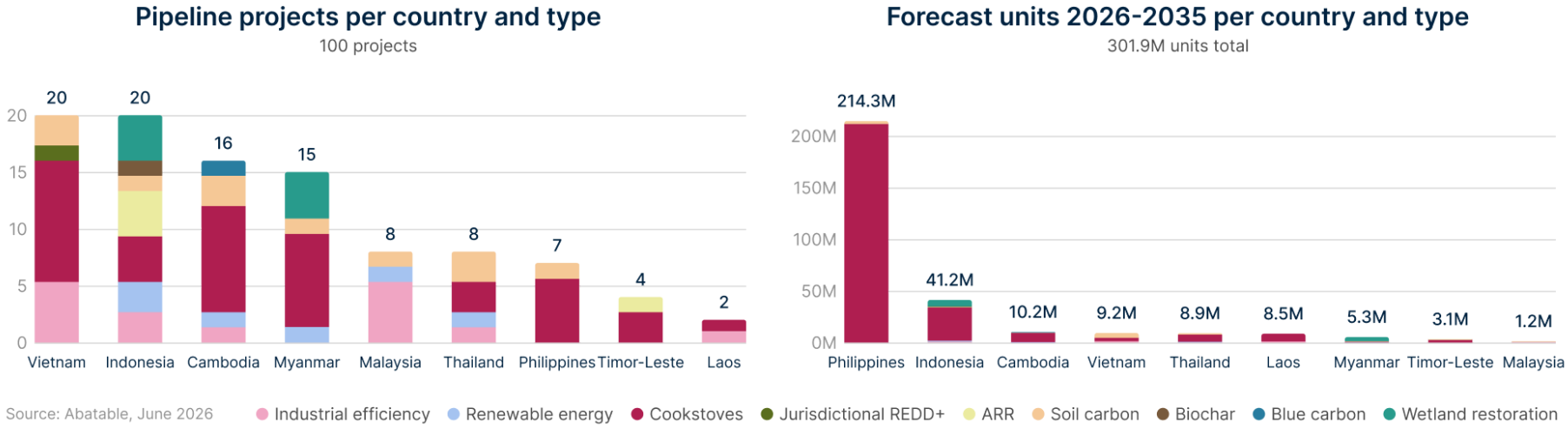
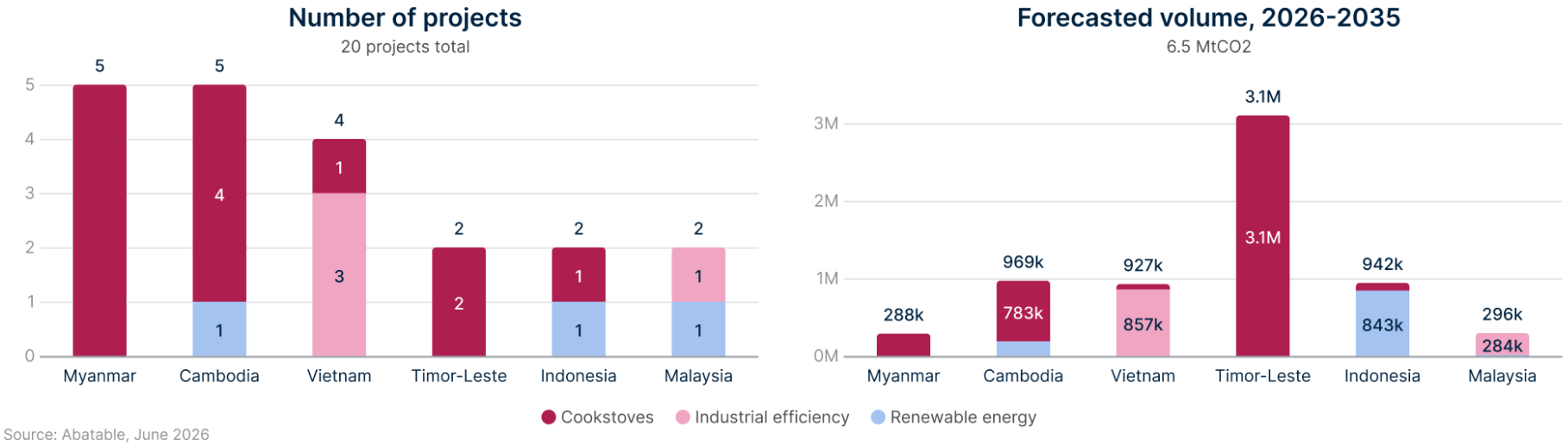


Figure 6: Distribution of validated projects in the CORSIA-aligned project pipeline by project type



Source: Abatable, June 2026

The composition of CORSIA-eligible supply in the market will continue to shift as projects mature through their development cycles and as host country positions evolve. This may be particularly true as new projects are developed, validated and registered in the next decade as an incoming supply source.

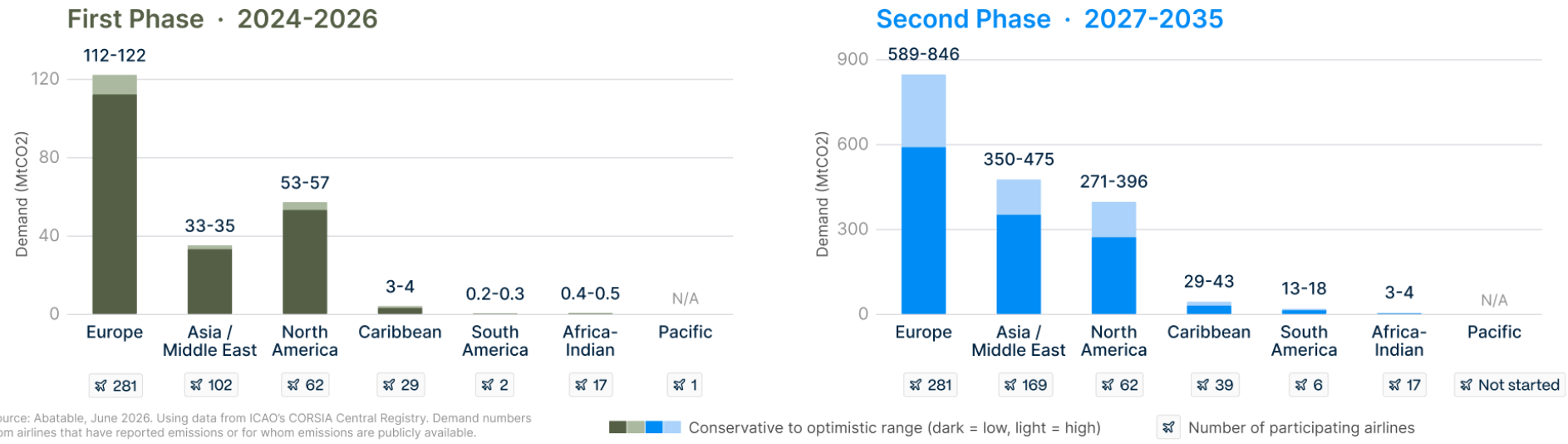
Under the CORSIA-aligned pipeline projects, the ASEAN supply is far more diverse than what is available or eligible today. The current CORSIA-eligible ASEAN supply (Figure 3) sits with just two countries, Lao PDR and Cambodia, and comes entirely from cookstove projects. The broader CORSIA-aligned pool (Figure 4) widens this to eight countries and a handful of project types, though cookstoves still account for most of the volume. The CORSIA-aligned pipeline (Figure 5) is even wider: projects span nine countries, including new entrants such as Indonesia and Timor-Leste, and draw on a much broader range of activities, adding renewable energy, wetland, and conservation projects to the cookstove and industrial types seen elsewhere in the region. If some of the projects in the CORSIA-aligned pipeline did not succeed in progressing to the validation and registration stage, then the region may end up with a reduced number of projects and potential units issuance, to only those projects already validated and which have not issued units now (Figure 6).

ASEAN CORSIA demand

Abatable modeling indicates global demand for CEEUs is expected to sit between 201 and 219 million units in CORSIA's First Phase, rising sharply to between 1,248 and 1,782 million units in the Second Phase[21]. The geographic distribution of demand varies between phases, reflecting the number and operational size of participating airlines and the states participating in the CORSIA First Phase compared to the Second Phase. In the First Phase, most of the demand comes from airlines in Europe (112 to 122 million CEEUs), followed by carriers based in North America (53 to 57 million) and Asia and the Middle East (33 to 35 million) – see Figure 7. For the Second Phase, airlines coming under the scheme from large developing countries add significant demand. Airlines in Asia and the Middle East are projected to require 350 to 475 million CEEUs during the Second Phase, making the region the second-largest source of demand globally, behind Europe.

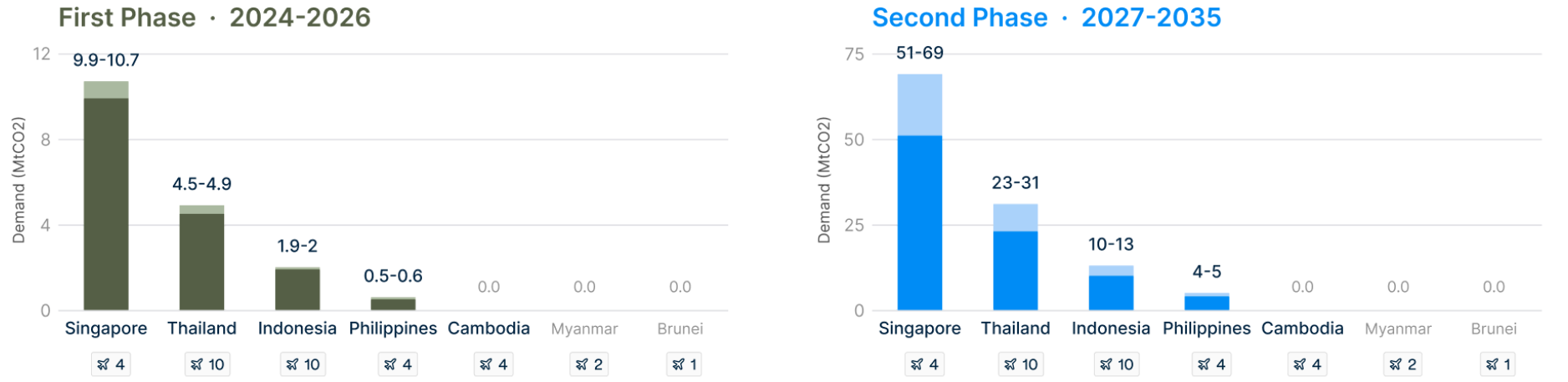
[21] See Annex 4 for a description of methodology.

Figure 7: CORSIA demand and number of participating airlines by global region in the First and Second Phases



Source: Abatable, June 2026. Using data from ICAO's CORSIA Central Registry. Demand numbers from airlines that have reported emissions or for whom emissions are publicly available.

Figure 8: CORSIA demand and number of participating airlines by ASEAN member state in the First and Second Phases



Source: Abatable, June 2026. Using data from ICAO's CORSIA Central Registry. Demand numbers from airlines that have reported emissions or for whom emissions are publicly available.

In the First and Second Phases, ASEAN member states Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam (as of 01 June 2026) are participating[22] via 39 airlines. (see Figure 8 and Annex 4)[23].

Of those, only 26 have made their route-level emissions public. Collectively, these airlines are expected to demand 17 to 18 million CEEUs in the First Phase, with demand rising five to seven-fold in the Second Phase, reaching up to 118 million CEEUs by 2035.

ASEAN demand is concentrated in three countries: Singapore, Thailand, and Indonesia, which together are estimated to comprise over 95% of the region's CORSIA offset requirements across both phases. Due to their volume of international flights, just four airlines – Singapore Airlines, Thai Airways, Scoot, and Garuda Indonesia – account for around 75% of expected demand from ASEAN-based carriers across the two phases: 13 million CEEUs in the First Phase and 65 million in the Second Phase[24].

Actual ASEAN CORSIA demand may be higher as additional ASEAN countries may yet voluntarily join the scheme, as this forecast draws on only 26 of the 39 ASEAN-based participating carriers, and because carriers' emissions or the CORSIA Sectoral Growth Factor may increase more than predicted.

Airlines in ASEAN are already acting for CORSIA compliance. Singapore Airlines and Scoot have together retired 150,000 CEEUs from a clean cookstoves project based in Lao PDR towards their compliance obligations. This is the second-largest public retirement of CORSIA credits by an airline globally (after Japan Airlines' retirement of 250,000 credits). In addition, Malaysia Aviation Group has engaged in several pilot transactions. This provides an initial demand signal which has the potential to catalyze the supply response needed to meet it, creating the conditions for a virtuous cycle in which regional demand drives regional supply.

[22] Brunei Darussalam, Lao PDR, and Myanmar are exempt and have not volunteered to participate: Brunei Darussalam as a Small Island Developing State, Lao PDR as a Landlocked Developing Country, and Myanmar as a Least Developed Country.

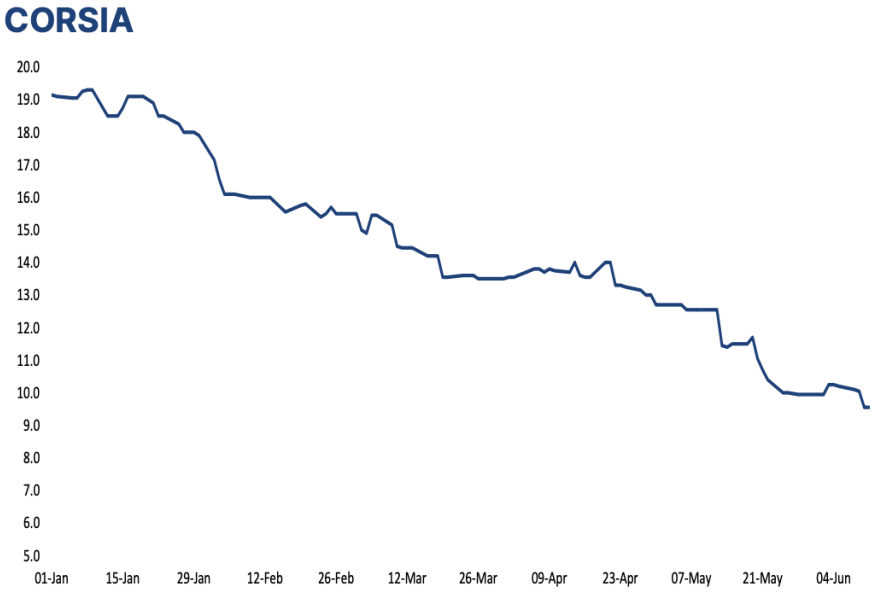
[23] Some airlines may be subsidiaries of others. For example, Scoot is the wholly owned low-cost subsidiary of the Singapore Airlines Group (SIA), and they have conducted their procurements jointly. The same may be true for other participating airlines, so the true number of purchasing organizations may be lower than the number of carriers subject to CORSIA.

[24] Demand estimates considered three different growth scenarios which represent high, medium and low growth rates for global and regional-level emissions (see methodology in Annex 4). The numbers for First and Second Phase in this paragraph represent the high growth rate.

CORSIA prices

CORSIA prices have decreased by nearly 50% over the last 6 months, from US$19.0 per unit in January 2026 to US$9.55 in June 2026 (see Figure 9), as additional CEEU supply has become available and the demand signal remains weak due to high jet fuel prices as a consequence of conflict in the Middle East. This represents a short-term supply imbalance, as there has been limited airline demand but a greater supply of CEEUs over this period. Some of the standardized contracts offered in the market indicate the trend (Figure 9).

Figure 9: Climate Impact X CORSIA Phase 1 X price benchmark (June 11, 2026)



The market benefits from several price benchmarks which represent different transaction modalities (Table 2), such as sectoral procurement events (auction), exchange transactions or bids and offers of standardized contracts, "Over The Counter" (OTC) transactions or quotes from project developers and intermediaries holding CEEUs. Benchmarks can differ significantly over time as they represent specific market conditions for a moment in the year, which may vary subject to demand and supply.

Table 2: CORSIA price benchmark summary

Source	Price Range (US$ per unit)	Transaction modality	Benchmark description
IATA ACE Auctions[25]	21.70 - 22.25[26]	Auction	• Auction of spot CEEUs exclusive to airlines • To date auctioned volume has been Guyana ART TREES, and DelAgua Rwanda Improved Cookstove Grouped Projects • 5x auctions to date, Q4 2024, Q1 2025, Q3 2025, Q4 2025, Q1 2026
ICE CEEUs Futures (delivery Dec-26)	9.75 - 16.90	Exchange standardized contract	• Low liquidity, limited airline participation • Intermediaries using for market making and hedging • Limit use by developers as price benchmark • Unclear what the underlying unit is
ICE CEEUs Futures (delivery Dec-27)	9.95 - 17.15		
Abaxx Futures (delivery Dec-27)	9.31 - 18.0		
Climate Impact X CORSIA Phase 1 X	9.55 - 19.0		• Transactions, bids and offers of any eligible unit across on-screen (exchange) transactions, OTC cleared transactions, and reported third-party OTC data
Abatable RFX (delivery Feb 2026)	18.00 - 18.50	OTC offers and transactions	• Prices based on bids and offers from suppliers of units from Jan 2026 • Prices based on a range of different projects • Offers include some units not yet labeled
Abatable RFX (delivery Sept-Dec 2026)	16.50 - 21.00		

Source: IATA, ICE, Abaxx, Abatable, Fastmarkets, Climate Impact X. Unless specified, quotes consider price ranges from 2026

Despite the recent downward trend in prices, all CORSIA benchmarks typically exceed prices for equivalent carbon credits or units offered in the voluntary carbon market. Prices reflect, in part, the additional costs of obtaining authorizations, guarantees against LoA revocations, and any administrative fees charged by some host countries. For instance, Ghana applies a US$3-5 per ton corresponding adjustment fee depending on the project type; Kenya has a fixed US$4 per ton fee for authorization issuance. Nigeria applies a US$10,000 authorization fee per project, whereas Uganda charges a 10% of the revenue generated in the selling of each authorized unit. Meanwhile, in ASEAN, Cambodia charges an administrative fee to cover the costs associated with the operation of the national authority responsible for authorizations and corresponding adjustments.

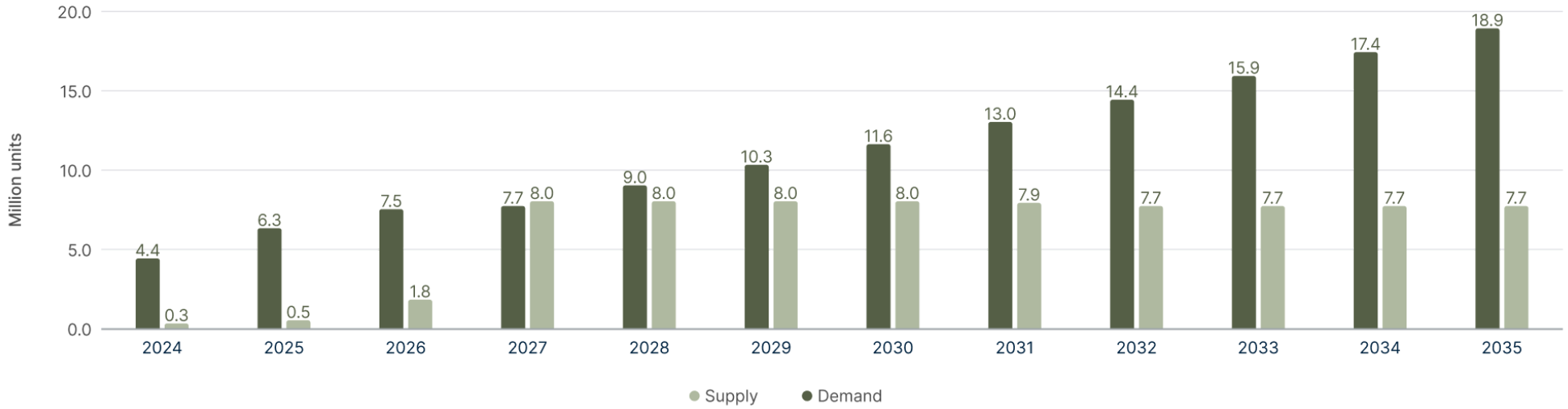
[25] ACE facilitates EEU offers and bids both on-screen transactions and OTC cleared transactions. Option of deferred payments and RFQs. EEUs below US$10/ton.

[26] According to IATA, price significantly decreased during the Q1 2026 event, but since it wasn't publicly communicated, it cannot be disclosed in this report.

The government fees are separate from other expenses associated with project guarantees. Where projects are coupling LoAs with insurance, insurance costs add a further cost unit, depending on provider, country, and project type. Some of the CORSIA-eligible standards require projects to obtain insurance policy that covers the risks of LoA revocation and improper accounting of the authorized units. The cost of insurance policies offered in the market by approved insurers varies, but may be equivalent to approximately 5-7% of project investment (as surveyed from carbon insurers), with fees varying according to risk profiles of host countries and that of project developers and the project themselves. In other cases, CORSIA-eligible standards require units contribution to a buffer pool that covers the risks of LoA revocation and the double counting of units for CORSIA and NDCs.

CORSIA supply and demand in ASEAN

Figure 10: Summary of ASEAN annual CORSIA supply and demand



Source: Abatable, June 2026

Today ASEAN hosts nearly 7.1% of global CEEU supply. Hosted projects hold small volumes of CORSIA-eligible supply, standing at 2.6 million units. In contrast, the demand expected to be triggered from airlines based in ASEAN during CORSIA's First Phase is expected to be up to 18 million – seven times larger than current eligible supply.

As CORSIA-aligned projects are authorized by host governments, and pipeline projects begin issuing CORSIA-aligned credits, modeled supply climbs to eight million units by 2027, briefly overtaking the 7.7 million tons of demand expected for that year (see Figure 10)[27].

From 2028 onwards, demand and supply diverge. Demand rises steadily year on year to 18.9 million tons by 2035, whereas supply holds near eight million units every year through to 2030 and falls to 7.7 million as the crediting periods of today's projects expire. By the end of the Second Phase, ASEAN-hosted supply is expected to cover 60% of demand triggered by airlines in the region.

Placing demand and supply side by side reveals where countries sit on the spectrum from net buyer to net supplier. Singapore and Thailand carry significant demand but host limited or no CORSIA-eligible supply, positioning them as net buyers that will need to source CEEUs from outside their borders. Viet Nam and Lao PDR, by contrast, hold meaningful supply but do not feature among the major demand countries, positioning them as potential net suppliers. Cambodia, Indonesia, and the Philippines occupy a more balanced position, hosting both demand and supply, which raises the possibility of meeting some compliance obligations through projects within their own borders.

[27] This analysis compares demand volumes under Abatable's "Regional growth scenario" (see Annex 4) over 2024-2035, against supply volumes under the 'Maximum duration scenario' over 2027-2035. The supply from 2024–2026 stems from CORSIA-eligible supply – i.e. 2.6 million units. The forecasted supply modeling is adjusted to Article 6 readiness score, which limits the volume of potential supply for countries with positive engagement with Article 6 and broader international carbon markets.

The state of ASEAN airlines' engagement with CORSIA and recommendations

CORSIA's success relies on a series of coordinated actions on both the supply and the demand sides of the scheme, involving carbon crediting standards, carbon projects, diverse authorities from host countries responsible for climate change policies and civil aviation, and airlines.

The airlines and stakeholders interviewed for this report made clear that demand signals are crucial to unlocking supply. The more demand exists, the more likely additional investment into existing and new projects materializes, and the more interest in authorization will come from host countries, together increasing CEEU supply. This virtuous enhanced ambition cycle would have the added benefit of reducing the risk of NDC non-achievement.

As expressed by airline and market participants, and based on expected offset obligations and available CEEUs, more supply is needed to enable airlines to meet their First and Second Phase obligations. In this sense, airline demand is a key factor to unlock supply.

All the airlines interviewed are developing detailed plans to meet their CORSIA requirements. Beyond the approaching First Phase deadline, two specific events have spurred this renewed engagement in recent months:

1. **Offsetting requirements for 2024 emissions**: In October 2025, airlines received their Notification of Offsetting Requirements for compliance year 2024. This made clear their first year of mandatory CORSIA obligations[28].

2. **Expanded CEEUs supply base**[29]: For a couple of years, the CORSIA market only had a single project (ART102) as the sole source of CEEUs for CORSIA's First Phase. In November 2025, new supply emerged when 1.5 million CEEUs from a second project finally became available for the CORSIA market[30], beyond those from the Guyana program. These additional 1.5 million units provided airlines with a choice in the projects from which they can purchase. As additional supply has come online, there are now 11.8 million tons of non-Guyana credits available from 56 other projects.

With a clearer picture of their obligations and more supply available in the market, airlines can plan effectively for their First and Second Phase exposure.

Managing risk is critical for airlines. For a compliance market like CORSIA, airlines must manage compliance assurance, cost predictability, delivery certainty, and reduced last-minute procurement risk.

In CORSIA, a key factor is eligibility risk: the risk that any given aligned credit does not become a CEEU (and is therefore ineligible for retirement against that airline's CORSIA requirements). As discussed in the Introduction, there are seven criteria a credit must meet to become a CEEU, and while there are over 18.2 million tons of aligned supply in ASEAN, some may not be authorized. Some projects may never receive an LoA; others may not be

[28] ICAO publishes the industry-wide Sectoral Growth Factor in October or November of the year following the compliance year. Once available, states can notify airlines of their final obligation.
[29] On October 15, 2025 Gold Standard approved the first set of insurance policies for LoAs; Verra followed on December 18, 2025. These allowed projects with LoAs registered under these standards to become CEEUs.
[30] GS11677 Biomass Energy Conservation Programme in Malawi implemented by project developer Hestian.

included in a BTR in the required timeframe. For airlines, what matters most is having the CEEUs available when needed and managing risk accordingly.

For most airlines, CORSIA is handled by their internal sustainability departments. Some teams are aware of the rules and operation of CORSIA and have initial visibility of available CEEU supply. Others are earlier in the process of engaging in these markets. The size of these departments and the resources available to them vary considerably – some airlines may have large teams, others may have just one person who may also have multiple roles.

Airlines also face a competitive commercial environment, and, in 2026, high fuel costs. This is compounded by the fact that, to effectively execute a CORSIA procurement strategy, a range of different stakeholders needs to be involved. These include:

- **Sustainability department**, which maintains keeping the airline well informed about CORSIA rules, availability of supply, and developments in the market.
- **Finance and treasury departments**, which approve and control budgets.
- **Legal department**, which reviews and approves contracts – especially important where airlines are negotiating complex forward delivery agreements.
- **Procurement teams**, which are often asked to manage and negotiate the actual purchasing process.

As an example, CORSIA procurement at MAG and Singapore Airlines is coordinated by the sustainability team, with differing approaches to collaboration with key internal stakeholders. At MAG, the finance department executes procurements. Another airline interviewed has a standing monthly meeting across the main departments involved.

The key to CORSIA preparedness is establishing these cross-functional ways of working which, in large organizations, can take time.

Initial factors limiting engagement

Airlines have historically held back from engaging with CORSIA due to the **lack of available supply**. Airline interviewees expressed a reluctance to purchase CEEUs at this stage where prevailing available supply was largely from a single project. Also, these credits are exclusively marketed by a single supplier that was able to command a price close to US$22-23 per tCO2 that may not have been attractive for many of the CORSIA-exposed airlines. In addition, some airlines indicated they may prefer CEEUs from project types other than those issued using the underlying High Forest, Low Deforestation module used to calculate the program's baseline.

All airlines interviewed for this report indicated that the expansion of the supply source for CORSIA is beneficial. The availability of multiple projects with a wider variety of geographical origins and environmental attributes makes for additional options in a more competitive procurement process, offering differentiated commercial offerings that benefit airlines' cashflow management. This ultimately facilitates greater buy-in from airline management and organizational counterparts towards earlier CORSIA engagement.

Another factor limiting engagement to date is that CORSIA is seen as an **extremely technical topic**. Some airlines have experience managing carbon credits through voluntary offsetting programs; others are starting from scratch and lack a reference or internal expertise on how to proceed.

However, CORSIA procurement is not a normal voluntary offset purchase. It requires cross-functional approvals across sustainability, finance/treasury, legal, procurement, fuel/commercial, and risk because unit eligibility, LoAs,

corresponding adjustments, delivery failure, insurance, cancellation evidence, and accounting treatment all affect compliance.

MAG got an early start on its procurement strategy in 2024 when the sustainability and treasury teams hired an external advisor to develop a comprehensive Carbon Trading Policy Framework[31]. This provided executive buy-in and internal alignment on how MAG should be approaching procurement.

In some cases, airlines are becoming investors into more advanced carbon project types, and are building closer relationships with carbon projects and crediting standards. Airlines in other regions evolved their carbon offsetting programs into a more comprehensive and sophisticated approach when leading with CORSIA compliance obligations.

All airlines in CORSIA are managing this complexity, including the risk of not having credits available by the CORSIA First Phase compliance deadline of January 31, 2028. Many are taking an approach for guaranteed delivery, whereby if the purchased credits are not delivered or eligible by a certain date, the supplier is required to replace them with another eligible project or pay a penalty. Including such contingencies in a purchase agreement requires sophisticated legal and contractual design.

For example, Singapore Airlines spent several months negotiating its 150,000-ton purchase and retirement. By contrast, another airline interviewed attempted to secure forward supply, but the transaction failed when the supplier was unable to provide sufficient delivery guarantees.

[31] Source: MAG 2024 Sustainability Report.

Strategic recommendations for airlines

Despite the complexities, airlines have started to procure CEEUs. MAG successfully completed the pilot purchase of CORSIA CEEUs through the IATA procurement event hosted on the Aviation Carbon Exchange (ACE) platform[32]. Other airlines interviewed have also conducted or are planning similar pilots through different modalities and partners. As mentioned above, in April 2026 Singapore Airlines retired 150,000 tons of VCS2924 for itself and its subsidiary Scoot[33].

Based on the interviews conducted for this study, there are several strategic recommendations for airlines to consider:

Recommendation one: Develop a clear approach to cross-functional CORSIA coordination
Determine a clear owner for CORSIA procurement and establish clear ways of working with other key operational stakeholders. Such cross-functional coordination is not insubstantial: an airline with a monthly working group on CORSIA procurement spent two years identifying clear roles and responsibilities and establishing ways of working before engaging in its first pilot transactions.

Recommendation two: Develop an approach for how CORSIA compliance interacts with other sustainability and emissions reduction efforts
Calibrate expected CORSIA CEEU purchases relative to other measures such as fleet renewal, route optimization, and SAF procurement. For Singapore Airlines, CORSIA is an important complement to its goal of using 5% Sustainable Aviation Fuel (SAF) by 2030. This is managed separately by its fuel procurement team.

[32] Source: MAG 2025 Sustainability Report.
[33] Source: Verra.

MAG has developed a combined compliance view covering gross emissions, eligible fuel claims, operational efficiency, fleet renewal, expected offsetting requirement, CEEU procurement volume, and overall cost exposure.

Recommendation three: Understand additional project requirements, if any
Establish clear internal purchasing guidelines and risk thresholds. Some airlines view CEEUs as pure commodities where one unit is equal to another; others may have specific preferences for host country, project type, or level of integrity.

One airline interviewed identified this as an internal tension – its finance and procurement team wants the lowest cost, while its sustainability team wants a reasonable level of integrity for the credits purchased.

Whatever the approach, airlines should understand their own preferences and risk tolerance. Several airlines interviewed mentioned substantial internal discussions to understand these preferences. Ideally, airlines would codify this approach in an internal procurement framework, as MAG has done, and secure executive buy-in. If necessary, airlines can partner with an external expert to facilitate such internal alignment and benchmark industry best practices.

Recommendation four: Address internal capabilities and expertise, which could result in working with partners
Airlines could consider engaging partners to help refine their approaches to managing their CORSIA compliance.

This could be informal, such as meeting with other airlines or engaging in forums such as those organized by IATA.

This could also include engaging external advisors to support with strategy development or procurement, and take references from due diligence services and ratings available in the market to better understand the project-level risks that are not captured by CORSIA-eligibility alone.

Mechanically, working with partners also allows access to a greater range of registries, as airlines may not have accounts across all eligible standards.

Finally, it is also understood that at least one Ministry of Transportation is exploring coordinating procurement on behalf of several airlines in its country, rather than having them each procure individually, which potentially provides an interesting model of government cooperation, analogous to the centralized SAFCo[34] established by the government of Singapore to centralize SAF procurement.

Recommendation five: Connect and maintain dialogue with ministries of transportation, civil aviation authorities, and ministries of environment, particularly in cases where there is CORSIA-aligned domestic supply
Engage ministries of transportation or civil aviation authorities in their domiciled country and, where necessary, abroad, to actively engage and activate their counterparts in environment and sectoral ministries to factor CORSIA supply into planning. One airline interviewed did this and stated that these relevant ministries were not connected to CORSIA prior to their interventions.

In some cases, a range of stakeholders can be involved. In Malaysia, for example, this coordination will likely need to include the Ministry of Natural Resources and Environmental Sustainability, the Ministry of Transport, the Civil Aviation Authority of Malaysia (under the Ministry of Transport), along with other airlines, project developers, and market infrastructure providers.

[34] See here.

Multiple airlines expressed a preference to procure credits from their host country, to the extent such projects were priced commercially, met compliance timelines, and were otherwise competitive with other sources of CEEUs. Such coordination could create a stronger imperative for ministries of the environment to authorize units for CORSIA and make it more possible for domestic airlines to support carbon projects in their own country.

Recommendation six: Conduct pilot transactions
It's recommended that airlines start purchasing credits, even in small amounts. This allows them to understand the procurement process, assess the supply and pricing landscape, build internal capacity, and develop contracting structures while minimizing risk and expense. Several of the airlines interviewed had not yet completed transactions, which is striking given CORSIA's First Phase is nearly halfway through.

This is especially important for airlines facing significant increases in their Second Phase compliance obligation. One airline interviewed mentioned they could likely meet their First Phase obligations through spot purchases. However, their obligations will be much larger in the Second Phase (they have many flights to countries not participating in the First Phase; therefore these flights will incur obligations in the Second Phase). As such, they will likely need to invest in projects or sign forward agreements to secure sufficient volumes. These are complex transactions requiring significant capabilities. Airlines should start building these capabilities now.

Recommendation seven: Hedge risk through staggered procurements or forward offtakes of eligible vintages per phase and compliance cycle
Hedge risk by purchasing volumes with eligible vintages throughout the compliance period, rather than at the end. Beyond initial pilots, smoothing transactions reduces pricing risk by averaging prices across all purchases, limiting exposure at the end of the period. This is compounded by CORSIA timelines – airlines will only receive their last Notification of Offsetting Requirements in October or November of 2027, leaving just a few months to secure their full First Phase volume before the 31 January 2028 compliance deadline.

Purchases could be made annually, quarterly, or even monthly, as is being explored by airlines interviewed for this report.

Transaction costs can be limited by establishing a network of multiple suppliers and partners during the initial procurement (as one airline interviewed had strategically done, spreading a large transaction across 5-6 suppliers and several projects) and relying on them for subsequent procurements.

Some airlines may also consider forward offtake agreements. This can be technically complex, managing delivery, eligibility, and counterparty risk across multiple periods. However this may be the most direct way of securing access to supply at fixed terms through different compliance periods. In addition, depending on the structure of the offtake, this can have a direct impact on the creation of more supply. Developers may be able to use secured "bankable" offtakes (discussed in the following section) to receive additional project financing for reinvestment in new projects expanding supply.

Airlines want CORSIA to work. Managing compliance obligations across a single international scheme is simpler and less costly than navigating an evolving ecosystem of emissions pricing programs across many jurisdictions, and allows them to use this scheme in concert with other decarbonization efforts. Engaging in the market is a good way to contribute to CORSIA's success.

The ASEAN CORSIA opportunity, and recommendations to realize it

The economic opportunity of eligible, aligned and aligned pipeline CEEUs

CORSIA-eligible units

The volume of CORSIA-eligible units issued from four projects based in ASEAN stands at 2.6 million CEEUs, with the region having the potential to generate an additional 6 - 20 million CEEUs by 2035 if the existing projects continue to operate at similar performance. Based on market prices[35] the economic value for ASEAN generated during CORSIA's First Phase represents **US$26-59 million**, and the region could capture **an additional US$63 - 460 million** by the end of CORSIA's Second Phase by 2035[36].

The cookstoves distributed by the four CORSIA-eligible projects in ASEAN are 'Advanced improved biomass stoves'. Abatable's data shows that developers of comparable stove projects spend between US$3.4 - 7.7 to deliver each ton of emissions reduction, averaging close to US$5/tCO2[37]. These figures reflect the capital requirements to design, finance, operate and verify a cookstove project that delivers high-integrity units, which directly translates into employment opportunities, and consumption of foods and services within the host country.

Based on these capital requirements, the existing cookstove projects in ASEAN have invested an estimated total of US$9-20 million to generate 2.6 million CEEUs, which deliver a market value of US$26-59 million so far, a return of nearly three times the investment. This is capital already at work in the region and highlights the economic opportunity for CORSIA-eligible supply[38] (see Figure 11).

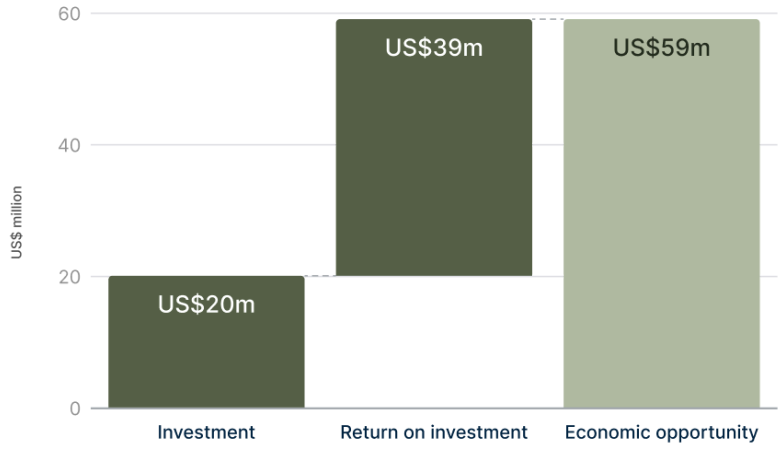
[35] Prices observed over the past 10 months during CORSIA's First Phase range from US$10 to US$23 per tCO2.

[36] For the economic opportunity, we multiply both current and forecast volumes of CORSIA-eligible and aligned volumes hosted in ASEAN countries by a set of fixed prices tracked in the CORSIA market over the past 10 months. The result shows what this supply would be worth at today's prices.

[37] A new era for high-quality carbon avoidance: the new floor price for cookstove carbon credits, Abatable 2025

[38] For investment, we draw the development cost of comparable cookstoves and REDD+ projects (which represent the most prominent mitigation activities in ASEAN) from Abatable's data, expressed in US$/tCO2, and multiply it by the volume of credits issued or expected to be issued by project type, subject to CORSIA eligibility. Development costs are reported on a range, from the lowest to the highest observed, with a central estimate based on the average. Where the volume of supply already exists, the figure shows capital that project developers have already committed; where supply sits in the pipeline, it indicates the capital still needed to bring those units forward.

Figure 11: Economic opportunity from CORSIA-eligible supply based in ASEAN countries – upper bound (2.6 million CEEUs)



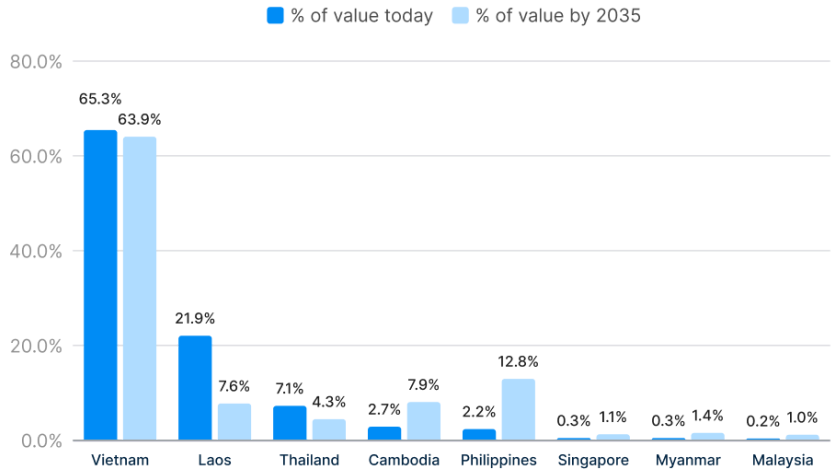
Source: Abatable, June 2026

CORSIA-aligned units

Furthermore, the 54 projects with 18.2 million CORSIA-aligned units issued and which are hosted in ASEAN member states could generate an additional 5 - 26 million CEEUs by 2035, considering the duration and renewal of crediting periods and performance to date. The economic value to be captured in the region for issued units today and in the future (by 2035) stands at **US$182 - 419 million**, **with an additional US$50 - 598 million**, respectively, for a total ranging from **US$232 million - 1.01 billion between 2026 and 2035**.

More than 60% of this economic opportunity could originate from Viet Nam (see Figure 12), should CORSIA-aligned units expected over 2026-2035 be authorized. This share of economic opportunity is likely to stay in Viet Nam by the end of CORSIA's Second Phase. For Lao PDR and Thailand, the share of economic opportunity generated today will be halved by 2035 as projects' crediting period expire[39] and come to an end, unless new carbon projects become part of the emerging pipeline. In contrast, for Cambodia and the Philippines, the share of economic value from supply increases by the end of the decade as projects mature through their lifecycle and start to generate more units.

Figure 12: Distribution of economic opportunity from CORSIA-aligned units by country over time



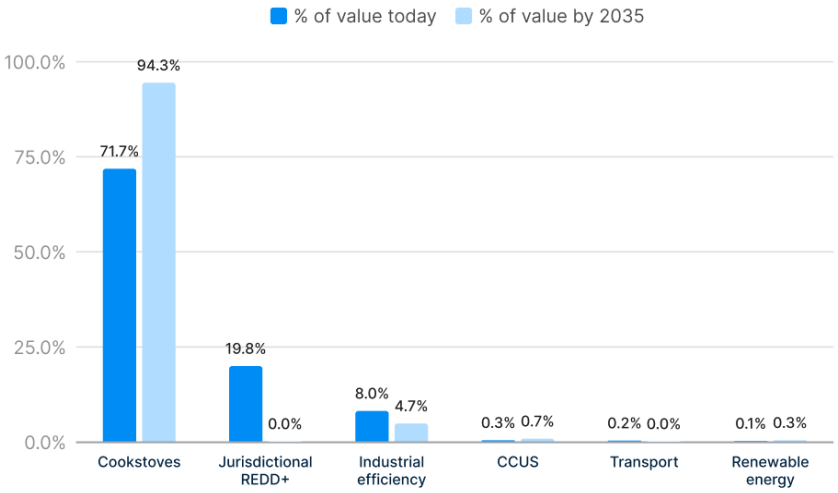
Source: Abatable, June 2026

[39] Crediting periods for cookstoves and household device projects run for five years, which can be renewed twice for a total of 15 years. Projects that have started their crediting period on the CORSIA eligibility date of 01.01.2016 or later may have concluded their extended crediting period.

The potential shift on opportunity to capture economic value reinforces the notion of incentivizing an additional number of carbon projects which may bring the next wave of CORSIA-eligible supply.

In terms of activity types in ASEAN, cookstoves projects are expected to remain as a prominent option and generate the largest economic impact today and by the end of CORSIA's Second Phase (see Figure 13). This largely depends on the project's crediting period lengths of existing projects, and the situation could change if other project types were initiated and authorized. One potential example is the only Jurisdictional REDD+ project in the region, hosted in Lao PDR and registered under FCPF, for which the crediting period expired by the end of 2024.

Figure 13: Distribution of economic opportunity from CORSIA-aligned units by project type over time



Source: Abatable, June 2026

Cookstove projects make up most of the CORSIA-aligned pool in ASEAN, accounting for 13.1 million of the 18.2 million aligned units issued so far. Their economics vary widely, given that the underlying activities use a diverse range of technologies and practices to deliver each ton. Developers spend anywhere from US$1.7 - 19.5 to deliver each ton of emissions reduction, depending on the stove technology and the setting in which they work.

Based on these capital requirements, the set of existing cookstove projects with CORSIA-aligned units in ASEAN have invested an estimated total between US$23 million and US$254 million[40], which delivers a market value of US$131 - 301 million so far, a return ranging from 1.2 - 5.7 times the investment. This is capital already at work in the region and highlights the economic opportunity for CORSIA-eligible supply[41].

The region's single CORSIA-aligned J-REDD+ project, registered under FCPF in Lao PDR, accounts for a further 3.6 million units. Developers of REDD+ projects spend between US$5.2 - 15.2 to deliver each ton. On that basis, developers have committed an estimated US$19 - 55 million in Lao PDR to bring this volume forward. The market value is between US$36 - 83 million, a return between 1.5 and 1.9 times the investment.

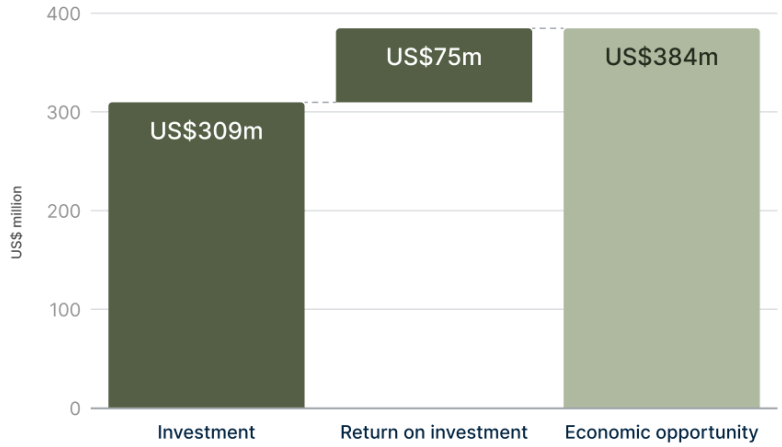
Taken together, the CORSIA-aligned units already issued to cookstove and J-REDD+ projects in ASEAN account for 16.7 million of the 18.2 million total

[40] A new era for high-quality carbon avoidance: the new floor price for REDD+ carbon credits, Abatable 2025

[41] For investment, we draw the development cost of comparable cookstoves and REDD+ projects (which represent the most prominent mitigation activities in ASEAN) from Abatable's data, expressed in US$/tCO2, and multiply it by the volume of credits issued or expected to be issued by project type, subject to CORSIA eligibility. Development costs are reported on a range, from the lowest to the highest observed, with a central estimate based on the average. Where the volume of supply already exists, the figure shows capital that project developers have already committed; where supply sits in the pipeline, it indicates the capital still needed to bring those units forward.

issued to date in the region. The investment behind them equals US$42 - 309 million, delivering a **total market value of US$167 - 384 million**. This capital is at work in ASEAN today, well before any of these units are authorized and reach the CORSIA market (see Figure 14).

Figure 14: Economic opportunity from CORSIA-aligned supply based in ASEAN countries – upper bound (18.2 million units)



Source: Abatable, June 2026

CORSIA-aligned pipeline units

For ASEAN, CORSIA-aligned pipeline projects represent a significant economic opportunity for the future. With a pipeline of 133-302 million units to be issued between 2026 and 2035, these projects **could generate US$1.3-7 billion by the end of CORSIA's Second Phase**.

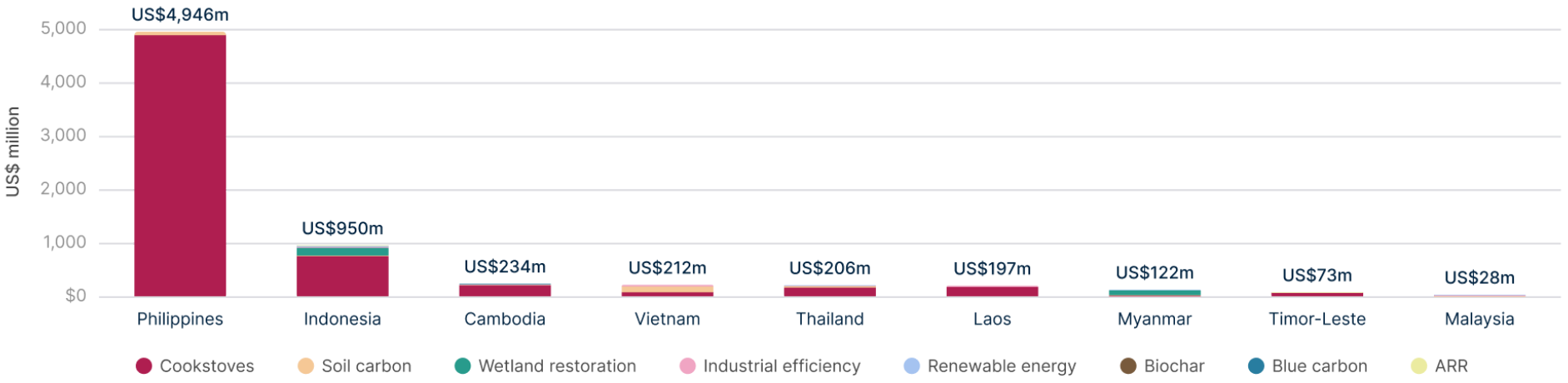
On the high end of the range, where CORSIA-aligned pipeline projects generate up to US$7 billion in market value, the Philippines is responsible for 71% of this activity (see Figure 15). This is primarily driven by a large cookstoves project registered under Verra (VCS 3956), aiming to distribute three million cookstoves over ten years, reducing 20.7 million tCO2e GHG emissions, on average, per year. Accordingly, the investment needed to materialize supply, leveraging cookstove development costs from Abatable's data (US$1.7 to US$19.5 per ton), could reach between US$0.5 billion and US$5.3 billion.

Although considered part of the pipeline as one of the list projects in the standards registry, it has not been validated, a step that may delay the delivery of the expected volumes. The potential supply and economic opportunity may be impacted not only from the need to complete validation, but by the need to transition to a newer methodology (from VMR0006 to VM0050), as the chosen methodology is no longer active. Also, the host country would need to confirm cookstoves as one of the project types considered for CORSIA and subject to an authorization.

In addition, the CORSIA-aligned pipeline could be further expanded if eligible standards updated their requirements to a series of project types which are not excluded from CORSIA eligibility for both First and Second Phases.

As part of the CORSIA-aligned pipeline in ASEAN, a significant proportion of the 100 projects are still to undergo validation and final registration in an eligible standard. If by any circumstance, projects do not progress to validated and registered status, the region would only rely on a smaller pipeline of already validated projects, which would bring 6.2 million units, with a potential economic opportunity close to US$150 million (see figures 16 and 17).

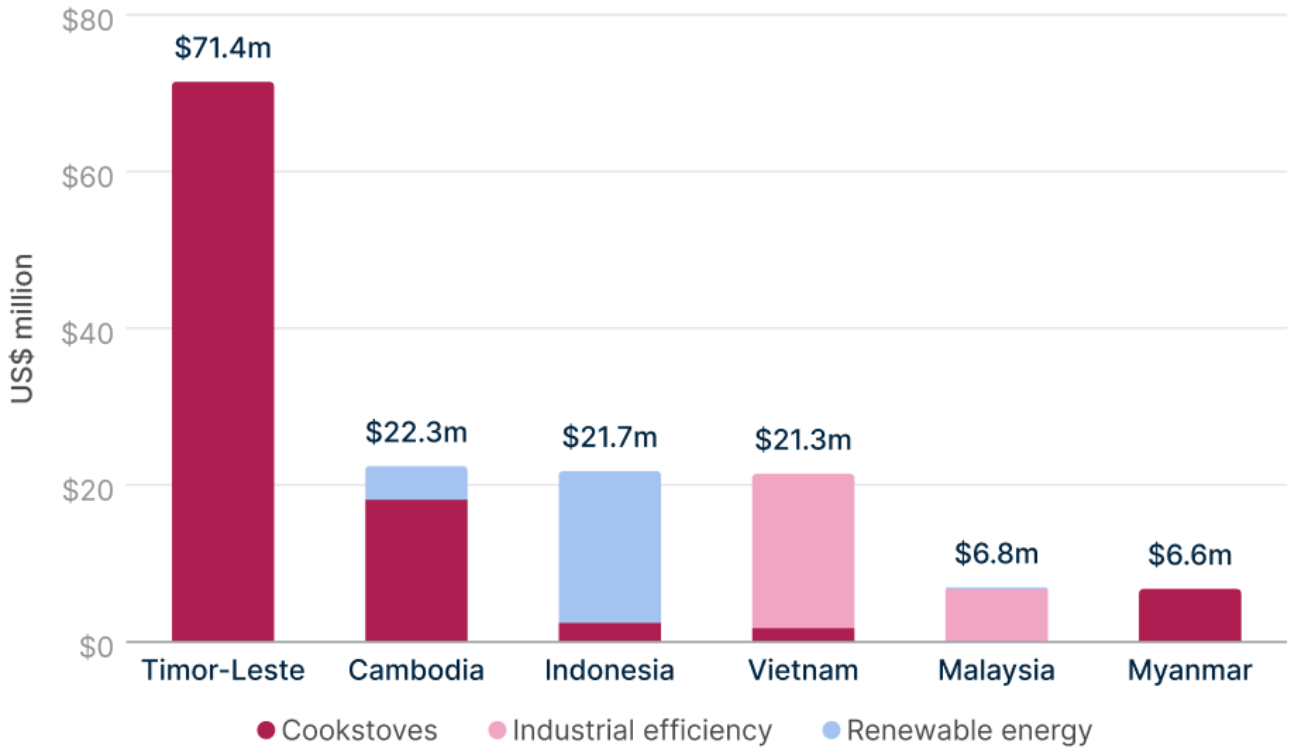
Figure 15: CORSIA-pipeline economic opportunity by country and type



Source: Abatable, June 2026. $US million, forecast 2026-2035

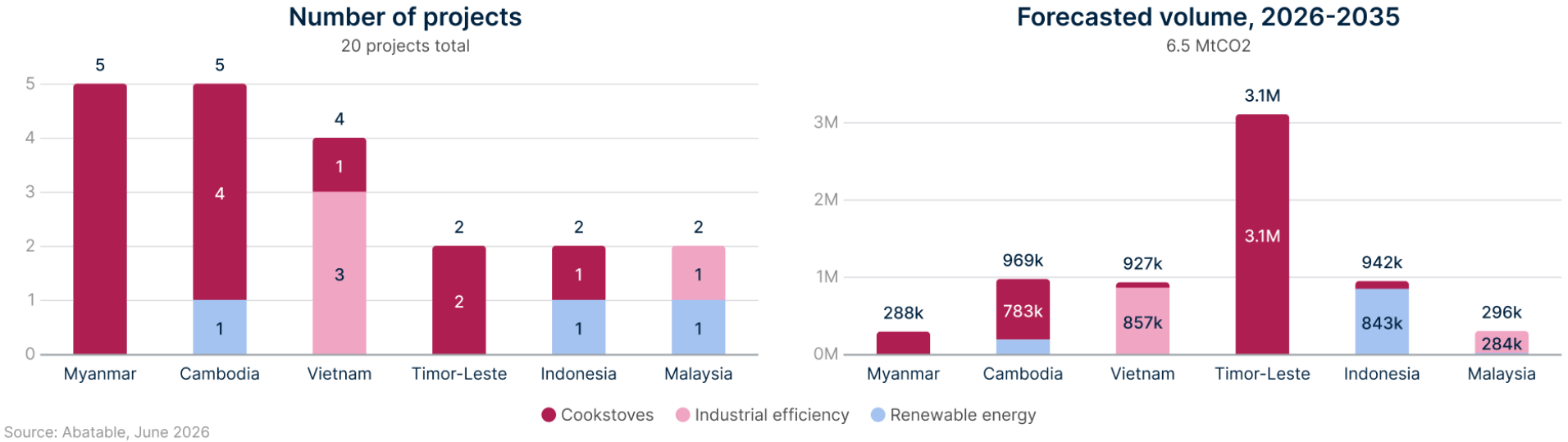
Ultimately, on the aggregate, the economic opportunity from CORSIA in ASEAN could collectively **generate an opportunity of US$1.6-8.5 billion** by 2035, considering the lower and high-bound estimates on prices and volumes for current and forecasted supply for CORSIA-eligible, CORSIA-aligned, and CORSIA-aligned pipeline projects in ASEAN (see Table 3).

Figure 16: CORSIA-pipeline economic opportunity by country and type from validated projects



Source: Abatable, June 2026

Figure 17: Distribution of CORSIA-aligned validated projects in the pipeline by project type



Source: Abatable, June 2026

Table 3: Economic opportunity for ASEAN from CORSIA supply: eligible, aligned, and pipeline

Eligibility status	Economic opportunity today for issued units (US$ million)	Economic opportunity from forecasted units over 2026-2035 (US$ million)
CORSIA eligible	26-59	63-460
CORSIA-aligned	182-419	50-598
CORSIA-aligned pipeline projects	0	1,310-6,946
Subtotal	**208-478**	**1,423-8,004**
Total	**1,631 - 8,482**	

Source: Abatable analysis, using historic pricing data points from IATA ACE Auctions, ICE Futures, Abaxx Futures, Climate Impact X CORSIA X, and Abatable's own RfXs.

In terms of activity types, 90% of the region's economic impact from CORSIA-aligned pipeline projects is expected to originate from cookstoves, followed by wider mitigation activities that include soil carbon, blue carbon and industrial efficiency projects. A wider set of activities could be pursued by individual countries in the region, subject to their preferences and priorities, in line with domestic mitigation potential, prospects of authorizations and interests for achieving NDCs.

Socioeconomic impacts from eligible and aligned CEEUs in ASEAN

Beyond economic impact, CORSIA supply generates substantial additional benefits for host countries, particularly when authorizations are for activities holding important socioeconomic benefits, such as improved cookstoves, rice cultivation, mangroves and degraded lands reforestation, or similar types where local communities and indigenous population have a strong participation.

The four ASEAN-based CORSIA-eligible projects provide a snapshot of positive socioeconomic impacts. Together, they are distributing 1.1 million safe drinking water purifiers and 1.4 million improved cookstoves to a similar number of households.

These projects reduce household indoor air pollution by reducing or eliminating emissions from biomass burning in open fires during cooking or water boiling. Improved air quality conditions lower the risk of eye problems, acute respiratory illness, and chronic obstructive pulmonary disease in the exposed population. The water purifiers additionally prevent waterborne diseases like diarrhea, cholera, and typhoid, regular diseases that hinder households' ability to maintain regular economic activities and sustain income levels and broader livelihoods.

In terms of gender equality and income, women and children connected to these projects previously spent up to 6 to 8 hours a day cutting, gathering, and carrying firewood and other fuels for cooking. Households that previously had to purchase firewood experienced an immediate increase in disposable income, as the highly efficient stoves and water purifiers require significantly less (or zero) purchased fuel, and freed time for other social and income-generating activities, including education and child care (see Table 4).

Table 4: Socioeconomic benefits from ASEAN-based projects currently supplying CEEUs

Project ID	Devices delivered	Socio-economic benefits
VCS 2925	800,000 improved cookstoves distributed	**Jobs:** 30-50 direct jobs for distribution, monitoring **Capacity building**: Training 200 individuals **Time saving**: 6-8 hours a day **Conservation**: 2.7 million tons of forest biomass annually
VCS 3052	1,000,000 water purifiers	**Conservation**: 1.6 million tons of forest biomass annually
VCS 2924	600,000 improved cookstoves	**Jobs:** 40 formal jobs in cookstoves assembly, distribution, and maintenance **Conservation**: 2.3 million tons of forest biomass annually
VCS 3204	100,000 water purifiers	**Jobs:** 40 employment opportunities related to assembly and maintenance **Time saving**: 1 hour a day **Conservation:** 170.2k tons of forest biomass annually

Source: Project Design Documents for the projects VCS 2924, VCS 2925, VCS 3052, and VCS 3204.

While not CORSIA-eligible yet, the 54 CORSIA-aligned projects in ASEAN are already delivering a wide range of socioeconomic benefits to different population groups in the shape of less air pollution, increased savings from cooking fuel expenses, new employment opportunities, and more (see Table 5).

Table 5: Socioeconomic benefits from ASEAN-based CORSIA-aligned projects

Country	Project type	Socioeconomic benefits
Myanmar	Clean cookstoves and household devices	• **Jobs:** A total of 908 individuals (41% women) active as sales agents. The program of activities (GS 1729 POA) operates on a micro-franchise model, training local men and women to become commissioned sales agents. • **Indoor air pollution**: Elimination of indoor air pollution for 7,000 to 10,000 people, out of high-risk respiratory environments.Reduced monoxide emissions by 82% and Particulate Matter by 70% compared to baseline. • **Capacity building**: Hosted 65 events with 2,351 participants (67% women) to educate locals on deforestation and sustainable practices. • **Conservation**: The stoves physically save approximately 13.5 to 13.9 trees per appliance annually, scaling to over 21,000 to 27,000 trees saved per year.
Viet Nam	Clean cookstoves and household devices	• **Jobs:** Creation of 23 dedicated workers at one manufacturing factory, 35 jobs at an induction stove production initiative, and 50 local individuals across other stove projects. Between 30 and 50 direct employment opportunities in assembly and distribution of equipment in safe drinking water purifier projects (VCS 2581, VCS 3599, VCS 2557) • **Financial savings**: Households save an average of US$1.29 per day on cooking fuel expenditures. • **Conservation**: Depending on the specific stove model, projects save between 1.973 tons and 32.359 tons of woody biomass per stove over its lifespan. • **Capacity building**: non-formal education and technical training to 30 local individuals per project.
	Industrial efficiency and waste management	• **Jobs**: Biodigesters projects (GS 10887, GS 10888, GS 10889, GS 10890) created 200 direct jobs for local masons and technicians. • **Financial savings:** Saves individual households 1.650 tons of firewood and 54.5 kg of LPG per year. • **Indoor air pollution**: 90% of the population reports noticeable reductions in smoke and foul odors from their animal barns due to the proper treatment of animal waste. • **Clean energy**: Generates 111 TJ (Terajoules) of clean thermal energy
Lao PDR	Clean cookstoves and household devices	• **Jobs**: The composting facility (VCS 2667) created 29 formal jobs (employing 14 Laotians and 15 Vietnamese workers. The water purifier initiative (GS 12111) created 40 direct full-time jobs, split equally between 20 men and 20 women. The cookstove project (VCS 2521) directly contracted local individuals, targeting 50 employees with a specific focus on hiring women. • **Time saving**: Saving women an average of 268 minutes (4.5 hours) per day gathering wood. • **Conservation**: Avoids the removal of 3.35 tons of woody biomass per stove. • **Capacity building**: Provides non-formal training in ICT and monitoring to 50 staff.
Cambodia	Clean cookstoves and household devices	• **Jobs**: VCS 3116 directly hires 14 local people, including women and persons with disabilities. Other cookstove projects (GS 11816, VCS 2409) target the direct hiring of 35 to 50 employees for distribution, maintenance, and monitoring. • **Conservation:** Conserves approximately 62.32 tons of woody biomass per household. • **Capacity building**: It also provides non-formal training to 50 individuals in climate change and clean cookstoves.

Thailand	Clean cookstoves and household devices	• **Job creation:** Project VCS 2522 directly employed 50 individuals for project implementation and 25 for local manufacturing. • **Conservation:** Conserves 16.15 tons of woody biomass per stove.
	Industrial efficiency and waste management	• **Job creation**: The Northern Fuel Pipeline Transportation Project (VCS 1852) employed 12-16 local construction workers for pipeline installation. The biogas facility (GS 3992) generated 9 to 17 direct, long-term operational jobs with wages at or above the regional average
	Small-scale renewable energy	• **Clean energy**: Clean Exports 10,802 MWh of clean electricity to the national grid annually. • **Job creation**: The Future Tech Solar Project (VCS4600) created up to 100 direct construction jobs during its build phase.
Malaysia	Transport	• **Outdoor air pollution**: Transitioning urban bus fleets to electric power significantly lowers air and noise pollution, improves local air quality, and lowers travel costs for residents.

Source: Project Design Documents for the 54 CORSIA-aligned projects

Based on the number of jobs created from CORSIA-eligible and CORSIA-aligned projects based in ASEAN, we estimate that in total **31,860 new jobs can be created in ASEAN over the next decade** from across current CORSIA-eligible and CORSIA-aligned projects, and projects in the pipeline that could issue CORSIA-aligned units.

Carbon projects have a broader set of socioeconomic outcomes beyond their direct impacts. Studies estimating such impacts include:

- The International Monetary Fund in a 2021 study[42] estimated a multiplier of 1.19 for green energy investments (every dollar invested in a green energy project resulted in 1.19 dollars in economic activity).
- Gold Standard in 2024[43] estimated that every carbon credit issued from a clean cooking project resulted in US$267 in value created, including the financial savings from reduced fuel use, the social cost of carbon saved, and improved health.
- BeZero Carbon in a 2024 study[44] estimated that every US dollar in traded carbon is tied to seven dollars of investment.

Modeling job creation impacts is complex. This report conservatively focuses on the direct impact of projects and potential CEEU value. However the project's indirect jobs creation impact is likely much larger but was not quantified.

Recommendations for ASEAN governments

Recommendation one: Map and assess CORSIA-aligned supply in the territory against NDC measures and national emissions sources

A lack of detailed visibility on the connection between carbon projects with national emissions sources and expected decarbonization trajectories per source would reduce confidence for authorizations. A mapping of project types, NDC measures, and emissions sources would increase the ability to accurately identify and forecast the amount of supply that could be

[42] IMF Working Paper: Building Back Better: How Big Are Green Spending Multipliers?
[43] Gold Standard: Valuating the benefits of improved cooking solutions.
[44] BeZero Carbon: $100billion for planet and people. What carbon credits can achieve.

authorized for CORSIA. Once the mapping is complete, issued units per activity type and sector and sectoral mitigation potential can be compared. This will help better understand the interaction between issued units per project type, the ambition of sectoral mitigation policies, and the materiality of authorizations, reducing or avoiding the risk of "overselling", where authorizing too many units could make the country unable to meet its NDC.

Recommendation two: Establish cross-ministerial working groups or other coordination mechanisms to align key government departments
CORSIA's success relies on communication and coordination between the ministries responsible for NDCs (usually the environment or sustainable development ministries), line ministries responsible for implementing measures (a variety, including energy, agriculture, and forestry ministries) and those charged with CORSIA (usually transportation ministries and civil aviation authorities). Increased communication would surface the offset needs of domestic airlines subject to the scheme and the prospects of CORSIA-aligned and CORSIA-eligible supply from the country. Limited interaction could hinder the ability to simultaneously meet the country's international civil aviation and climate goals.

To realize the benefits of authorizing units, countries need to balance achieving their NDCs with the economic opportunity of project investment and revenue generation. NDCs are five-year commitments mandated under the Paris Agreement. Countries will usually set targets by sector (e.g. forestry and land use, transportation, or energy). This process will usually be coordinated by one ministry (e.g. the Ministry of the Environment) working with individual line ministries (e.g. the Ministry of Transportation) to establish their respective targets. CORSIA specifically is managed by ministries of transportation and / or civil aviation authorities.

The ministries of finance and economy also play a key role in setting the compensation mechanism for unit authorization and considering how these measures impact economic growth.

DNAs require both the political mandate and line ministry support to make authorizations, along with the sectoral data to effectively make decisions. Both require substantive coordination. DNAs and ministries of the environment working with finance ministries to allocate revenues from authorization to line ministries can enable this coordination.

This is especially challenging as authorization is often forward-looking. Ideally, governments could commit to applying corresponding adjustments for several years in the future[45] to provide greater certainty to investors and developers to unlock project investment. Different government bodies need to work closely together to both establish sector targets and identify the extent to which they wish to authorize units from each. This can be especially complex if considering authorization that will cross multiple NDC periods.

Ghana provides an example of cross-ministerial coordination in its institutional arrangements for Article 6.2 cooperative approaches[46]. The ministry responsible for coordinating Ghana's NDC and the government's climate change agenda is the one overseeing the implementation of Article 6.2 cooperative approaches, including the issuance of authorizations. However, for its mandate, it coordinates with other institutions who have the mandate to make decisions related to quantification, authorization, monitoring, verifying and reporting of mitigation actions. These are the Carbon Market inter-Ministerial Committee for cooperative approaches oversight and coordination; the Carbon Market Committee for approvals and rulemaking;

[45] Governments are able to issue LoAs for credits not yet issued.
[46] Ghana's framework on international carbon markets and non-market approaches, 2022.

and the Carbon Market Technical Advisory Committee for technical advice. Ghana's Carbon Market Office coordinates the operations.

Recommendation three: Define and prioritize target sectors and/or project types where CORSIA project investment would be welcome
Ministries of the environment can be clear on which types of projects they will authorize units from and, in doing so, guide investment toward those sectors or harness technology transfer from international partners. These sectoral positive lists should be developed in close consultation with line ministries.

Governments can make clear that they may authorize units from clean cooking or water purification projects, thus spurring investment in those sectors with substantial community impact and health benefits.

This can be done through "positive lists" based on project types or methodologies that are a priority for the host country. Countries in the world have advanced such options. For instance, "Ghana's framework on international carbon markets and non-market approaches"[47] allows for development across 25 project types such as landfill gas management, clean cookstoves, and solar minigrids, alongside other requirements for NDC alignment. This provides developers and investors alike with the clarity to develop projects in Ghana while inducing investment in those target sectors.

A good reference example is the Thailand electric bus program. Funded by the Swiss government, this program replaced 2,000 diesel city buses with electric buses and supported the installation of a city-wide network of electric charging stations. This is a relatively complex infrastructure investment project in which the developer and local partners, in partnership with the Thai and Swiss governments, could deploy innovative technologies.

[47] Accessible here.

Such joint initiatives impact environmental and transportation ministries, along with local government stakeholders.

Recommendation four: Harness CORSIA as a source of revenue and investment to fund other mitigation activities and other sustainable development benefits
The revenue from CORSIA (in particular, authorization fees) can be used to fund additional climate mitigation. Several jurisdictions have established clear authorization fees, paid to governments, which can be reinvested to fund further emissions reductions and sustainable economic development.

An effective way to get governmental buy-in for authorization is starting with the end in mind: how can governments use carbon markets to accelerate their sustainable development – both the projects themselves and revenues received – and then work backward. This both guides the development of project positive lists and benefit-sharing plans, and can contribute to getting support from line ministries if they know what they are getting in return.

Ghana, for example, has proposed a model under which the proceeds from its authorizations (US$3-5 per ton) would be split across the different ministries: 40% to the line ministry overseeing the mitigation activity (e.g. the Ministry of Agriculture for a farming project), 30% for reinvestment in climate and adaptation programs, and 20% for low-carbon start-ups, with the balance spent on administrative expenses.

Guyana has a detailed Low Carbon Development Strategy (LCDS), where revenue from its national jurisdictional REDD+ program is split, with 15% allocated directly to approximately 242 Indigenous and hinterland communities, who manage the funds through Village Sustainability Plans covering projects such as eco-lodges, farms, and sanitation, and 85% directed to national climate adaptation infrastructure, including canals, sluice rehabilitation, and renewable energy.

Paraguay's enabling legislation requires at least 50% Paraguayan labor participation, including technical professionals, in every carbon project, and obliges all developers to register with the national carbon credit registry, in effect channeling part of project spend and capacity-building into the domestic economy[48].

While the specific fee amount and structure may vary, it can nonetheless provide a new, clear source of revenue for host governments.

Recommendation five: Pilot authorizations with initial volumes that signal an intention to support CORSIA. Based on analyses from recommendations one to four above, the government can set a clear budget for authorized units, and consider partially authorizing projects where a portion of credits are sold for use in CORSIA and a portion for use towards the NDC. Pilot authorizations could be implemented for a percentage of units issued by a CORSIA-aligned project.

Developers are often more likely to launch a project if it is able to sell units into a compliance market like CORSIA, for which authorization is necessary. Ministries of the environment, in partnership with line ministries, can also be strategic on a project-type basis in how they authorize units. Projects can issue thousands or millions of credits per year, and not all of these need to be authorized for each year of the project's life. Instead, governments can work with developers to understand the proportion needed for the project to proceed.

The remaining non-authorized balance can be offered by projects to the VCM, in which authorization is not required. In doing so, mitigation outcomes directly support the host country's NDC, the host country benefits from the larger project investment and activity, and the project developer receives some revenue from credit sales.

Under Japan's bilateral Joint Crediting Mechanism, authorization happens on a project-by-project basis with a clear negotiated split between the seller host country and Japan.

However, governments should still aim to be clear and reasonable with how they negotiate such splits to provide developers and investors the certainty needed to launch projects.

Countries do not need to meet all readiness criteria before benefiting from authorizing units. CORSIA does not require, for example, bilateral agreements for sale to other countries under Article 6.2. Nor do host countries need to wait for mechanisms established in the Article 6.4 Paris Agreement Crediting Mechanism. Instead, countries can "unilaterally" authorize units for CORSIA to test their policies and procedures and signal to investors and developers their willingness to engage in this market. By doing so in small quantities, they can also avoid jeopardizing their NDC achievement while still establishing internal approaches and fast-tracking their entry into the Article 6 market.

Article 6.2 guidance specifies that countries must set out the use cases for which a host country grants an authorization. For bilateral trading between countries, the use is defined as being for NDC purposes, while units authorized for airline use under CORSIA must identify the use as Other International Mitigation Purposes (OIMP). These are not mutually exclusive, however: a host country willing to authorize units can make them available for both use cases rather than limiting itself to one.

ASEAN member states still need to remain competitive as supply jurisdictions. Airlines have a global array of supply from which to purchase. While ASEAN has a deep pipeline of potential projects, so do countries in

[48] Paraguay Law 7190/2023.

Africa, Latin America, and elsewhere. Countries should still consider how to construct carbon policies that both ensure CORSIA works for them as an economic and climate opportunity and are also attractive to international developers and financiers.

Recommendation six: Collaborate with other ASEAN member states to facilitate the supply of CORSIA-eligible units, while also agreeing to support each other on the achievement of members' NDCs

ASEAN member states can play a relevant role in authorizing enough supply to facilitate CORSIA compliance across the First and Second Phase of the scheme for all the airlines from the region.

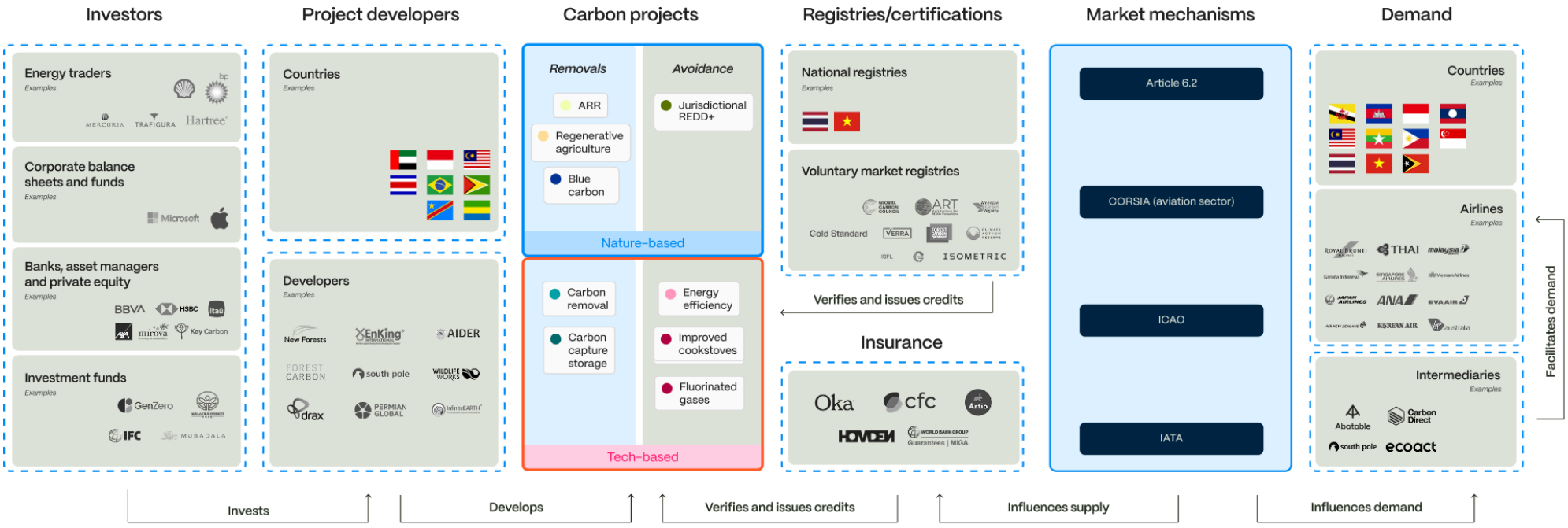
This would require the authorization of a significant volume of units from the 100 CORSIA-aligned pipeline projects. Given the geographical distribution of these projects, some member states may face the challenge of authorizing larger volumes from projects within their borders, which could affect their ability to achieve their NDC targets. Conversely, other member states may be less constrained and still able to host an increasing number of projects over time.

To prevent an undue burden in single countries, all member states may benefit from increased regional cooperation. All ASEAN member states could agree to facilitate the supply of CORSIA-eligible units, while also agreeing to support each other on the achievement of each member's NDC. A regional agreement on cooperative approaches under Article 6 could provide the necessary framework for a regional flow of mitigation outcomes, including those for CORSIA purposes. Under the Paris Agreement, all parties can cooperate in the international transfer of mitigation outcomes, creating the possibility of multidirectional flows of units between countries. Success would be underpinned by robust and accurate accounting of the authorized units to reduce the risk of double claiming.

Recommendations for other CORSIA stakeholders to help unlock supply

Airlines and host countries sit within a complex value chain of CORSIA stakeholders and market participants (see Figure 18) who play distinctive roles in the CORSIA ecosystem. Across these different organizations, airlines and governments interact with sectoral bodies such as ICAO and IATA, but also with project developers, standards and registries, insurance providers, investors, intermediaries and exchanges, consultancies, multilateral organizations, civil society, and ratings agencies. All in all, the different set of participants in the CORSIA market could also help unlock CORSIA supply.

Figure 18: CORSIA market stakeholders



Source: Abatable, June 2026.

stepRecommendation one: Expand market stakeholders' collaboration and coordination, particularly to support capacity-building

"Capacity-building" refers to support for host governments to build their Article 6 frameworks, implement programs, and ultimately authorize units. There is a significant range of capacity-building available to all countries, including from UN agencies and other multilateral organizations (such as UNDP, GGGI, and the World Bank), governments (e.g. GIZ), other NGOs (e.g. Conservation International), and private companies.

Through these approaches, governments also receive advice on other, overlapping types of climate policy, such as REDD+ implementation.

There are three potential gaps in this capacity-building support, coupled with some examples of how to alleviate:

1. **Improve coordination**: Governments may receive advice from multiple providers at the same time. One example given in stakeholder interviews was having one set of consultants traveling in, delivering a week of workshops, followed by a different set of consultants covering similar materials a few weeks later. This can be intentional on the part of host countries wishing to receive multiple viewpoints on the topic and choosing the one that works best. Or it can come from multiple potential partners presenting their own solutions and introducing additional complexity into decision-making.

   There have been efforts to better coordinate. Local offices of different partners may coordinate closely within that country. In addition, several leading capacity building organizations, including the World Bank, GGGI, GIZ, ICVCM, UNDP, UNFCCC, and the VCMI released the Country Guidance for Navigating Carbon Markets in 2025 to better harmonize support for host countries to participate in high-integrity carbon markets[49].

2. **Incompleteness**: Many capacity-building programs cover only one aspect of NDC or Article 6 implementation and do not provide end-to-end support. As such, governments must fill in the gaps between incomplete yet overlapping advice. This is not always the case, and some partners such as GGGI have designed their programs to offer comprehensive support for host countries.

3. **Limited explicit CORSIA support**: Most capacity-building programs are funded by buyer countries and thus targeted toward a specific Article 6.2 bilateral program. Switzerland, for example, is a primary funder of the Article 6 UNDP Carbon Cooperation platform, often in support of its own Article 6.2 purchasing program. However on June 6th, 2026 IATA launched the Supporting Alliance for CORSIA EEU Supply[50], grouping stakeholders to target CEEU supply bottlenecks and improve countries' access to carbon markets and related resources.

   In addition, in some cases, project developers with strong government relationships may fund capacity building to accelerate government authorization of their projects. For example, one developer working in a sub-Saharan jurisdiction hired a leading

[49] Country Guidance for Navigating Carbon Markets.

[50] Grouping of stakeholders across the CORSIA ecosystem in efforts to boost the availability of 225-250 million CORSIA Eligible Emissions Units (EEUs) by spring 2027. The Alliance seeks to:
- Pool the participating organizations' resources and target bottlenecks with tailored, practical, and pragmatic implementation assistance.
- Facilitate and enable countries' management of the interface between their Nationally Determined Contributions under the UNFCCC and the process required to make carbon credits available for use under CORSIA.
- Improve countries' access to carbon markets and related resources.

consultancy (interviewed as part of this study) to run a half-year end-to-end project to structure that country's Article 6 framework. At the conclusion of this work, the developer received authorization for its project.

Recommendation two: Act to augment government capacity

Much capacity-building is focused on the provision of technical advice from external service providers in relation to Article 6 implementation and authorization frameworks and processes. While this can provide expertise, governments often have limited means to implement it, with the relevant agency operating with a small staff and a broad mandate. One project developer interviewed for this report stated that it had gone as far as drafting the relevant BTR annex on behalf of the host government to accelerate its submission, filling the capacity gap that delayed corresponding adjustments and units labeling as CEEUs.

One model, as pioneered in countries like Mexico or by multilateral agencies like GGGI, is embedding team members in relevant ministries' staff as secondees or equivalent. These schemes respond to host country requests for additional support beyond accessing external consultants for specific technical analyses. Secondments with early career professionals or national experts may prove useful to expand the day-to-day capacity in ministries, particularly on matters related to Article 6, CORSIA, national reports to the UNFCCC and other transparency-related commitments. This provides both much-needed bandwidth to operate these new responsibilities and ensures long-term expertise is built.

Recommendation three: Facilitate greater transparency across the market on incoming supply

All airlines interviewed indicated the challenge of monitoring the eligibility of supply as carbon projects progress on meeting CORSIA requirements. This is compounded by the commercial reality that airlines are approached by many developers and intermediaries selling units, whether eligible or not, and lack reliable data to verify. Airlines are exposed to conflicting messages as they are told many things on supply by many people in the market.

Monitoring all ~2,500 pipeline projects globally as they progress through the stages of issuance and eligibility requires significant capabilities. Airlines must monitor both projects' issuance status (registration, validation, verification, and issuance) along with their progress in receiving authorization and the later labeling of the units as CORSIA eligible. Some of this data is public through registries, but much is not, particularly the statuses and nuances of host country authorization.

Indeed, one airline noted that it is difficult to gauge whether, just a year and a half from the compliance deadline, the market is on track for sufficient supply (currently 36.6 million tons) relative to the estimated 200 million tons of demand.

There are some efforts to standardize data availability. One effort is the Climate Action Data Trust, through the World Bank, that links, aggregates, and harmonizes all major carbon credit registry data.

For aviation specifically, Boeing has launched the Cascade Climate Impact Model. This provides a comprehensive view of different pathways for aviation sustainability across traffic, aircraft, operations, energy (fuel), and requirements for offsets and removals.

However, these tools only aggregate data. Data on projects' progress toward authorization is currently spread between developers and host countries (status of LoA or BTR attainment); insurance companies (status of underwriting); and registries (status of tagging). These market stakeholders could collaborate to consolidate and make this data available through existing

channels such as Cascade, enabling airlines to better track available supply and plan their procurements.

Recommendation four: Clarify insurance uncertainties around guaranteeing no double claiming of units

One "known unknown" raised throughout airline interviews relates to insurance implementation against LoA revocation risk. An LoA is effectively a commitment for a government to implement a corresponding adjustment to their national emissions balance in the future. Depending on their reporting cycle, it can be multiple years before the corresponding adjustment is included in a BTR submission. In the absence of a BTR that guarantees proper accounting of units, project developers can instead insure against the risk that the CA is never implemented (i.e. the LoA is revoked). The combination of an LoA and insurance can make an aligned credit a CEEU.

At this point, there are four insurance agencies approved by various CORSIA-eligible standards to cover for LoA revocation risks: Artio, CFC Underwriting Limited, the Multilateral Investment Guarantee Agency (MIGA), and Oka The Carbon Insurance Company[51]. In addition, Howden provides supervisory function over the approval of insurance policies for Gold Standard and VCS.

The approved insurance providers offer slightly differentiated policies to cover breach of contract, CORSIA guarantee, or corresponding adjustment coverage. In the case of a LoA revocation or a failure to apply a corresponding adjustment, the insurance policy will pay out for the substitution, replacement or compensation of CEEUs, or facilitate the units from their credit supplier pool (e.g. a third party administrator for units compensation or replacement).

From the airline's perspective, the replacement process happens in the background, settled between the insurance company, the project developer, and the registry.

However, as no insurance policy has yet been triggered, the airlines interviewed had expressed uncertainty regarding how these policies will work in practice or what the liability may be for them. For example, will insurance providers be able to effectively secure eligible replacement CEEUs if the market is short or prices are very high when the insurance claim is made? What happens in the case of an airline purchasing a CEEU, its LoA being revoked, and the airline attempting to retire the credit before a replacement is secured? Where does liability ultimately lie? Such uncertainty can contribute to airlines delaying their purchases until more clarity emerges.

Insurance providers – along with other market stakeholders – could provide additional clarity and case studies on how complex CORSIA-related policies work in practice, engage with airlines more closely to understand their concerns, and make clear how these are guarded against.

Recommendation five: Establish standardized purchase agreements

Purchase agreements should adequately meet the needs of buyers and sellers. For CORSIA buyers, that is enabling them to manage their compliance risk; for sellers, that is locking in a purchase.

Spot transactions for issued CEEUs are relatively low-risk, as credits are already eligible and issued. However, as the market evolves and airlines look to hedge their future exposure into CORSIA's Second Phase, several of those interviewed expressed an interest in forward transactions.

[51] Five providers have received approval to date, though coverage varies by standard. Oka and CFC Underwriting are approved by both Verra and Gold Standard. MIGA is approved by Gold Standard only. Artio Carbon and Kita are approved by Verra only; Kita did not submit for Gold Standard's first eligibility round. No public approvals have been announced by ACR, CAR, ART TREES, or the other eligible standards as of June 2026. As no policy has yet been triggered, the practical mechanics of claim execution remain untested across all providers.

Template purchase agreements exist for voluntary carbon credit transactions in general, but no CORSIA-specific forward-contract equivalent has emerged. Without a standard form, each transaction requires bespoke legal review, adding cost and time. This also requires specialized legal expertise, including knowledge of both the carbon market and CORSIA, which not all airlines or project developers have.

The absence of standardized terms also constrains project finance. Without consistent contract structures and price transparency, institutional lenders struggle to model credit resale value or take security over credits as collateral. As institutional capital engages more deeply with CORSIA, pressure for commercially robust, “bankable” contract forms will grow alongside demand.

Insurance products are increasingly being structured into CORSIA purchase contracts as a risk management layer, covering non-delivery, credit invalidation, or loss of eligibility. The use of such products could further de-risk purchases for airlines, provided contracts are effectively insurable.

Conclusion

As a region that both hosts major airlines and has significant carbon credit supply potential, ASEAN sits in a unique position in the CORSIA market. With 17 to 18 million CEEUs required from the region's airlines in CORSIA's First Phase alone, and demand set to rise five to seven-fold through the Second Phase, the stakes are material. Globally, only 36.6 million tons of CEEUs are currently available, compared with an estimated 200 million tons of CORSIA First Phase demand, and ASEAN's pipeline represents one of the most significant untapped supply reserves in the world.

The economic case for ASEAN is clear: if it engages with the authorization of units and incentivizes additional mitigation action that can be allocated for CORSIA and against NDCs, the region could capture **US$1.6 to $US 8.5 billion in market value over the next decade,** over CORSIA's First and Second Phases.

With existing CEEU supply from the region, existing carbon projects have attracted between US$9 and 20 million in investment and can generate US$26-59 million at current market prices as soon as airlines engage in purchasing and retiring units for CORSIA's First Phase.

An additional set of carbon projects that comply with ICAO requirements, and are identified as CORSIA-aligned, could add 18.2 million units if authorized, with the potential of generating an additional 5 to 26 million units by 2035. These projects have attracted between US$42 and US$309 million in investments, and could bring additional value ranging from US$232 to US$1 billion, a value that could materialize if host countries issue LoAs for existing and expected volumes. Of these, US$167 to US$384 million would come from activity types the region has a strong position on, including cookstoves, household devices and jurisdictional REDD+.

Finally, a nascent pipeline of carbon projects are coming into the market, with the prospect of issuing between 133 to 302 million units between 2026 and 2035, which could be used for CORSIA's Second Phase. This has the possibility of generating US$1.3 to US$7 billion in revenue over the next decade.

Host country authorization, airline procurement readiness, and market infrastructure have each advanced meaningfully in the past 18 months, and the conditions are in place to move faster. What is needed now is coordinated action across the value chain, well in advance of the 31 January 2028 compliance deadline. Airlines that establish internal frameworks, conduct pilot transactions, and smooth their procurement across the compliance period will face less execution risk than those that wait. Host governments that begin authorizing units, even incrementally, send a credible signal to developers and investors that ASEAN is open as a supply jurisdiction. Market stakeholders, from capacity-building providers to insurance companies and registries, can reduce friction by pooling resources, improving data transparency, and engaging more directly with airlines on the practical questions that remain unanswered.

ASEAN has the pipeline, the demand, and the policy momentum. Whether that translates into a functioning regional market depends on how quickly its participants choose to move.

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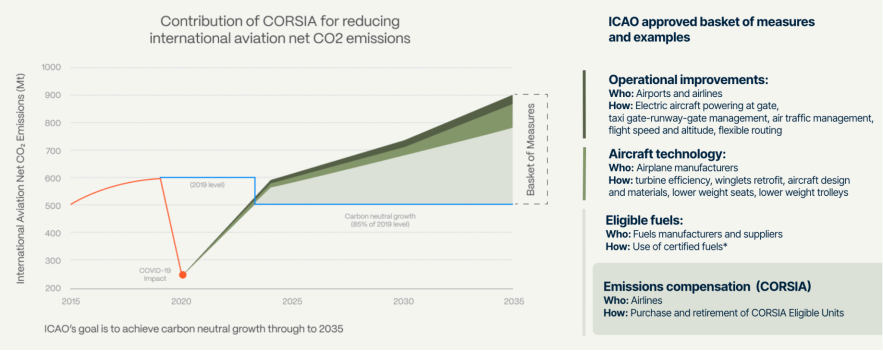
Annex 1: Introduction to CORSIA

Purpose

The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is the global market-based instrument used by civil aviation to achieve carbon-neutral growth to 2035. The scheme covers international flights' emissions growth relative to a 2019 emissions baseline. CORSIA complements in-sector emission reductions pursued via operational improvements on the ground and during flight, advancement of aircraft technology, and use of fuels that generate lower emissions on a lifecycle basis.

Figure A1: An overview of CORSIA



CORSIA adoption and administration

CORSIA was developed by the United Nations International Civil Aviation Organization (ICAO) and is implemented through ICAO resolutions and country-level regulations. The scheme relies on the monitoring, reporting, and verification of annual emissions by airplane operators, the calculation of offsetting requirements for emissions surpassing an emissions baseline set for the scheme, and requiring airplane operators to purchase and cancel eligible emission reduction units in an amount that covers the designated compensation values.

The scheme applies to all airplane operators (passengers and cargo) covering international flights on routes between participating countries. The scheme runs from 2021 to 2035, organized around three phases: a pilot (2021-2023), a voluntary First Phase (2024–2026) where states opt-in, and a compulsory Second Phase (2027-2035) including all ICAO members (with some exclusions).

By 01 June 2026, a total of 690 airplane operators from 130 countries covering nearly 13,000 routes voluntarily were included in CORSIA's First Phase. From 2027 and through 2035, participating in the scheme becomes mandatory for all ICAO members, with countries' exclusions based on share of global air traffic and socio-economic development[52].

From ASEAN, eight member states are participating in CORSIA First Phase: Cambodia, Indonesia, Malaysia, Philippines, Singapore, Thailand, Timor-Leste, Viet Nam. Subsequently, 39 airlines based in these states are subject to the scheme – see Annex 3.

[52] There are two exclusions: 1) Aviation-based: states with a very small share of global air traffic; and 2) socioeconomic: Least Developed Countries, Small Island Developing States, and Landlocked Developing Countries are automatically exempt regardless of traffic volumes. However, some countries like Cambodia and Timor-Leste have opted-in voluntarily despite being under these categories.

CORSIA-eligible Emissions Units (CEEUs) for compliance

CORSIA compliance relies on the use of CORSIA-eligible Emissions Units (CEEUs) issued by eligible carbon crediting standards. ICAO's Council, with the technical contribution of the Committee for Aviation Environmental Protection (CAEP), defined eligibility criteria for the assessment of carbon crediting standards available in the market and the assessment of their carbon credits that could become CEEUs. The assessment is undertaken by the Technical Advisory Body (TAB), which makes recommendations to the Council.

From April 2026, ten carbon crediting standards or programs are eligible for supplying CEEUs for CORSIA's First Phase and four for the Second Phase.

Eligible standards First Phase (2024–2026)	Eligible standards Second Phase: Compliance cycle 2027-2029
• American Carbon Registry (ACR) • Architecture for REDD+ Transactions (ART) • BioCarbon Fund for Sustainable Forest Landscapes (ISFL) • Climate Action Reserve (CAR) • Forest Carbon Partnership Facility (FCPF) • Global Carbon Council • Gold Standard • Isometric	• American Carbon Registry (ACR) • Architecture for REDD+ Transactions (ART) • Gold Standard • Verified Carbon Standard (VCS)
• Premium Thailand Voluntary Emission Reduction Program (Premium T-VER) • Verified Carbon Standard (VCS)	

Carbon projects registered under these standards may request the labeling of their carbon credits as CEEUs, provided they comply with the ICAO eligibility criteria and conditions.

For carbon credits or units to become eligible as CEEUs and supply the CORSIA market, they must meet seven key conditions[53]:

ICAO conditions for supply to be CORSIA-aligned

1. The project issuing the units must be registered with a CORSIA-eligible standard or program. Currently, there are ten approved standards for the First Phase, and four for the Second Phase.
2. A project's first crediting period must have started on or after 01 January 2016.
3. Projects must follow any methodology or protocol from the eligible standard, with the exclusion of some standard-specific exemptions.
4. Carbon credits issued by the project must represent emissions avoidance, reduction, or removal that occurred from 01 January 2021 through 31 December 2026 for the First Phase or through 31 December 2029 for the Second Phase.

[53] Source: CORSIA-eligible Emissions Units, ICAO. For the list of exclusions per standard, check the latest ICAO '*CORSIA-eligible Emissions Units*' document.

We consider units that meet this criteria as CORSIA-aligned as they meet the core requirements, however they are not yet fully eligible. To be so, and to become CEEUs that can be retired by airlines to meet compliance, they require additional requirements from their host country:

ICAO conditions for supply to be CORSIA-labeled (CEEU) and eligible for compliance

5. Carbon credits must have been authorized by the host country for use towards CORSIA or "Other International Mitigation Purposes".
6. Information on the authorized units and their corresponding adjustment for the first transfer must be included in national reports to the UNFCCC, where a national report could be an Annual Information Report or a Biennial Transparency Report (BTR).
7. If the authorizations and units have not yet been communicated by the host country, then projects must obtain a guarantee against the risk of double-counting, covering authorization revocation. The guarantee may be an insurance policy or a contribution to a buffer pool that covers for this risk, which must be effective at least until the standard or program has verified that the corresponding adjustment has been applied[54].

Only when all the conditions are met, a carbon credit may be labeled as a CEEU in the registry system of the respective eligible standard or program and canceled by an airline operator towards compliance.

Units authorizations for CORSIA use are granted by governments, with the authorization function often sitting in the ministry responsible for environmental or sustainable development affairs, and regularly allocated to the office acting as Designated National Authority (DNA) for Article 6 of the Paris Agreement. As per ICAO resolutions and CORSIA criteria, the authorizations are expected to follow the COP29 Article 6 decisions on countries' authorization of internationally transferred mitigation outcomes[55].

The authorizations and corresponding accounting of units are complemented by the civil aviation authorities or equivalent aviation regulatory body, which act as the competent authority to administer CORSIA domestically.

Reporting requirements are set by ICAO in Annex 16, Volume IV: operators submit an Emissions Monitoring Plan to their competent authority by 28 February, a verified annual Emissions Report by 30 April of the following year, and Emissions Unit Cancellation Reports at the close of each three-year compliance cycle. States administer these requirements; some, like Singapore, enact binding national regulations with sanctions for non-compliance, while others rely on the civil aviation authority's general mandate. State Action Plans (SAPs) submitted to ICAO set out each country's national plan, including any specific domestic reporting or registry arrangements.

From an operational perspective, airlines must purchase and retire CEEUs equal to an amount that captures emissions in excess of an emissions baseline set by ICAO, contribution to annual global emissions, and according to a sectoral growth factor (SGF). The scheme's emissions baseline for the First Phase is 85% of global 2019 aviation emissions. Offset obligations will be communicated to an airline about ten months after the emissions year (e.g. in October 2025 for compliance year 2024). In the First Phase, airlines have until 31 January 2028 to purchase and cancel volumes from their 2024–2026 compliance years.

[54] ICAO. Clarifications of TAB's Criteria Interpretations Contained in TAB Reports. Version: November 2025.

[55] See COP-29 report and decisions on Article 6, in particular decision 4/CMA.6 on Matters relating to cooperative approaches referred to in Article 6, paragraph 2 of the Paris Agreement.

Annex 2: List of CORSIA-eligible projects

Table A1: CORSIA-eligible supply, global, as of 01 June 2026

CORSIA Eligible standard	Project ID	Project name	Units issued (tCO2) - CEEUs
ART	ART 102	Guyana	24,892,114
Gold Standard	GS11136	GS10959 VPA05 Safe Water Project in Rwanda V	25,291
Gold Standard	GS11135	GS10959 VPA04 Safe Water Project in Rwanda IV	25,908
Gold Standard	GS11922	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 22	67,412
Gold Standard	GS11906	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 6	41,492
Gold Standard	GS11910	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 10	53,246
Gold Standard	GS11925	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 25	3,480
Gold Standard	GS11903	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 3	15,246
Gold Standard	GS11905	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 5	14,349
Gold Standard	GS11919	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 19	66,977
Gold Standard	GS11932	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 37	41,294
Gold Standard	GS11909	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 9	46,471
Gold Standard	GS11929	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 31	32,118
Gold Standard	GS11732	GS10789 GS 10790 VPA42: Efficient and Clean Cooking for households in Tanzania	2,806
Gold Standard	GS11902	GS11677 Malawi Biomass Energy Conservation Programme CPA 2	5,692
Gold Standard	GS11918	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 18	63,795
Gold Standard	GS11926	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 26	42,830
Gold Standard	GS11913	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 13	63,419
Gold Standard	GS11917	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 17	63,934

Gold Standard	GS11911	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 11	54,887
Gold Standard	GS11920	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 20	69,914
Gold Standard	GS11924	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 24	42,830
Gold Standard	GS11904	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 4	856
Gold Standard	GS11912	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 12	60,643
Gold Standard	GS11914	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 14	52,694
Gold Standard	GS11907	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 7	42,830
Gold Standard	GS11931	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 35	73,481
Gold Standard	GS11916	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 16	70,777
Gold Standard	GS11928	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 29	13,446
Gold Standard	GS11908	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 8	17,967
Gold Standard	GS11921	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 21	18,570
Gold Standard	GS11915	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 15	42,830
Gold Standard	GS11930	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 33	74,161
Gold Standard	GS11923	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 23	70,345
Gold Standard	GS11927	GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 27	48,894
VCS	VCS2687	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-010	43,466
VCS	VCS3699	DelAgua Improved Cookstove Grouped Project	1,734,350
VCS	VCS2825	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-006	107,446
VCS	VCS2685	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-009	105,433
VCS	VCS4000	DelAgua Clean Cooking Grouped Project in The Gambia	196,652
VCS	VCS2772	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-014	94,301
VCS	VCS4531	Reducing Gas Leakages within the Hududgaz Gas Distribution Networks across Uzbekistan	500,000
VCS	VCS2776	Madagascar Improved CookStove Project by KCM-Wood#CPA-W-018	69,834
VCS	VCS2773	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-015	107,593
VCS	VCS2924	Grouped Projects for Laos Improved Cookstove	1,101,542

VCS	VCS2779	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-021	77,371
VCS	VCS2688	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-011	93,757
VCS	VCS2774	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-016	82,645
VCS	VCS2775	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-017	95,656
VCS	VCS2780	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-022	51,948
VCS	VCS3837	DelAgua Clean Cooking Grouped Project in Sierra Leone	2,078
VCS	VCS2827	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-008	114,960
VCS	VCS2794	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-030	623,128
VCS	VCS3204	Grouped Projects For Laos Water Purifier	174,763
VCS	VCS2778	Madagascar Improved CookStove Project by KCM-Wood#CPA-W-020	61,186
VCS	VCS2707	ICS distribution for Improving life style of Malagasy Community	106,788
VCS	VCS2925	Grouped Projects for Cambodia Improved Cookstove	755,262
VCS	VCS2777	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-019	86,655
VCS	VCS4150	DelAgua Clean Cooking Grouped Project in Rwanda	2,843,114
VCS	VCS2690	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-013	73,261
VCS	VCS3052	Grouped Projects For Cambodia Water Purifier	520,100
VCS	VCS2689	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-012	108,964
VCS	VCS2311	Madagascar Improved Cookstove Project by KCM-Wood#CPA-W-001	95,850
VCS	VCS2826	Madagascar Improved Cook Stove Project by KCM-Wood#CPA-W-007	108,486
VCS	VCS2312	Madagascar Improved Cookstove Project by KCM-Wood#CPA-W-002	101,037

Annex 3: List of ASEAN airlines

Table A2: ASEAN-based carriers' inclusion in CORSIA based on ICAO's participating states, as of 01 June 2026

ICAO Member State	Airline	First Phase inclusion (2024–2026)	Second Phase inclusion (2027-2035)
Cambodia	• Cambodia Airways • Cambodia Angkor Air • Sky Angkor Airlines	Y	Y
Indonesia	• Batik Air • Citilink • Garuda Indonesia • Indonesia AirAsia • Lion Mentari Air • My Indo Airlines • Super Air Jet • TransNusa Aviation Mandiri	Y	Y
Malaysia	• AirAsia Berhad* • AirAsia X Berhad* • Batik Air Malaysia* • Flyfirefly SDN Bhd* • M Jets International • Malaysia Airlines Berhad • Malindo Airways* • Raya Airways* • World Cargo Airline*	Y	Y
Philippines	• Cebu Air • Philippine Airlines	Y	Y

	• Philippines AirAsia*		
Singapore	• Jetstar Asia Airways • Scoot Tigerair • Singapore Airlines	Y	Y
Thailand	• Bangkok Airways • K-Mile Air • Nok Air Public Company • Thai AirAsia • Thai AirAsia X • Thai Airways International Public • Thai Lion Mentari • Thai Viet Jet Air Joint Stock Company	Y	Y
Timor-Leste	• Aero Dili*	Y	Y
Viet Nam	• Bamboo Airways* • Vietjet Air Aviation* • Vietnam Airlines* • Viet Nam Travel Airlines*	Y	Y

** No public emissions data available from ICAO's CORSIA Central Registry*

Source: Total Annual CO2 Emissions and Information for Aeroplane Operators, available here.

Annex 4: CORSIA supply and demand forecasting methodology

About Abatable's model

Abatable's CORSIA model provides a comprehensive annual forecast of demand and supply of CORSIA-eligible units to 2035. The model reproduces ICAO's offsetting rules and eligibility criteria and conditions per Phase, as it looks into the complete list of participating countries, all the designated airlines, all the international civil aviation routes covered by the scheme, and the eligible carbon crediting programs as published by ICAO.

Abatable's **CORSIA demand forecasting model** follows a top-down approach where historical emissions data from over 13,000 international flight routes and 690 airlines were captured and translated into three CORSIA demand scenarios over the scheme's Pilot Phase (2021–2023), First Phase (2024–2026), and Second Phase (2027–2035). The model is predominantly built on official data from ICAO.

Abatable's **CORSIA supply forecasting model** in contrast follows a bottom-up approach, sourcing data from Abatable's proprietary carbon project database. Our database concentrates project-level data, including project ID, geography, crediting program, methodology, project status, and crediting period from almost 18,000 carbon projects in the voluntary carbon market.

Forecasting demand

Historical emissions

Historical emissions data from international routes and airlines were sourced from ICAO's CORSIA Central Registry (CCR): Information and Data for Transparency – Part II and Part III.

These data sources allow a historic aviation emissions profile at the country and airline level to be built, covering 2019–2023 for countries and 2021–2023 for airlines. The former is based on ICAO's stipulation that the departing country of any given international route bears 100% of the emissions associated with that route. The latter was built from the total emissions per airplane operator and those subject to offsetting requirements reported by airlines to ICAO.

To determine the historic volume of emissions eligible for CORSIA, the model uses CORSIA States for Chapter 3 State Pairs and tracks CORSIA's date of entry over time for 193 jurisdictions. To determine countries' participation after 2026, we used the following assumptions:

- For the First Phase, countries voluntarily participating in the First Phase by June 2026 will continue to participate in CORSIA by 31 December 2026 and into the next phase.
- For the Second Phase, every country participates in CORSIA unless they are exempt, following ICAO's criteria on both aviation (revenue-ton-kilometer from 2019) and socio-economic aspects –

i.e. accounting for small-island development states, landlocked developed countries, and least-developed countries. Countries that are exempt but participated on a voluntary basis in the First Phase are modeled to continue participating in the Second Phase.

Future emissions growth at the country level

To estimate the future volume of emissions eligible for CORSIA, we devised three growth scenarios:

1. **Regional growth scenario**
   We grouped countries into nine air navigation regions, following ICAO's Regional Air Navigation Procedures, and calculated each region's average weight compared to the world's international aviation emissions per year over 2019-2024 (details on the countries covered in each region can be found at: https://skybrary.aero/articles/icao-regions). The key reason to follow ICAO's official grouping of countries is to better capture air traffic dynamics.

   Using the International Air Transport Association (IATA)'s expected emissions from international aviation to 2035 in the absence of CORSIA, and regions' relative weight of emissions, we built an emissions pathway per region and country out to 2035.

   a. Example: we assume international aviation emissions from Nigeria to grow in line with countries in the region, at an average annual rate of 5.3% over 2025-2035.

2. **Sustained growth scenario**
   This scenario rests on the average annual growth rate of IATA's expected emissions from international aviation to 2035. We assume that emissions from international flights per country grow at an average rate of 2.5% per year over 2025-2035.

   a. Example: instead of growing at an average annual rate of 5.3% under the **Regional growth scenario**, Nigeria's emissions from international aviation grow at a 2.5% rate, the same as any other country in the world.

3. **Regional, sustained growth scenario**
   This scenario also follows IATA's expected emissions to 2035; however, it takes into account each country's relative weight to the world's total emissions in any given year, resulting in 190 different pathways that, when aggregated, reflect a 2.5% annual growth rate of international aviation emissions.

   a. Example: Considering Turkey represented on average 3% of international aviation emissions over 2019-2024, we assume Turkey's emissions will continue to preserve this share in a world where emissions grow at an annual average rate of 2.5%. Under this scenario, Turkey's expected emissions from international aviation in 2026 sit at 15.9 MtCO2, whereas under the **Sustained growth scenario**, Turkey's emissions sit at 15.5 MtCO2.

With forecasted emissions profiles for over 13,000 international routes under three scenarios, we assessed the annual emissions covered by CORSIA based on countries' participation. ICAO dictates that emissions from an international flight are eligible to be offset under CORSIA if both countries (origin and destination) are participating in the scheme at the same time.

At the global level, the **Regional growth scenario** results in the largest CORSIA demand, while the **Regional, sustained growth scenario** outputs the lowest level of demand. It's important to note that these scenarios should not be read as the most optimistic and the most conservative. Rather, each tells an alternative story of how emissions from international aviation could potentially grow under different circumstances.

Future emissions growth at the airline level

To estimate emissions from individual airlines, we used historical data from ICAO's Part III. From this we captured total emissions per airplane operator and total emissions subject to offsetting requirements reported by airlines to ICAO. We then filtered out emissions eligible for CORSIA based on the airline's member state and its eligibility to participate in the scheme over time.

To estimate the future volume of emissions at the airline level, we followed the same scenarios used to estimate international aviation emissions, using airlines' headquarters to apply regional growth rates.

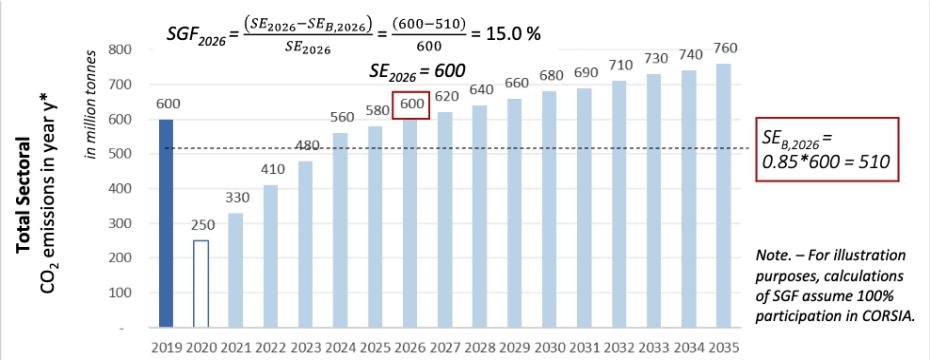
Estimating the sector growth factor and airlines' CORSIA demand

Ultimately, an airline's offsetting requirements under CORSIA result from the product of the Sector Growth Factor (SGF) in any given year multiplied by the airline's emissions in that same year. The SGF results from the percentage change of the sector's emissions relative to the baseline over the same time period.

For the First Phase, the baseline – as defined by ICAO – represents 85% of 2019 international aviation emissions for countries actively participating in CORSIA in the current year of emissions calculated. For simplicity purposes, we assume that the baseline continues to represent 85% of 2019 emissions under the Second Phase and until 2035.

Using ICAO's Environmental Technical Manual as an illustrative example: the baseline emissions of 2026 are calculated by multiplying the emissions eligible for CORSIA in 2026 (600 MtCO2) by 85%, resulting in 510 MtCO2 (see Figure A2). Subsequently, the SGF is calculated by the relative growth of emissions versus the baseline (600-510)/600, resulting in a factor of 15%.

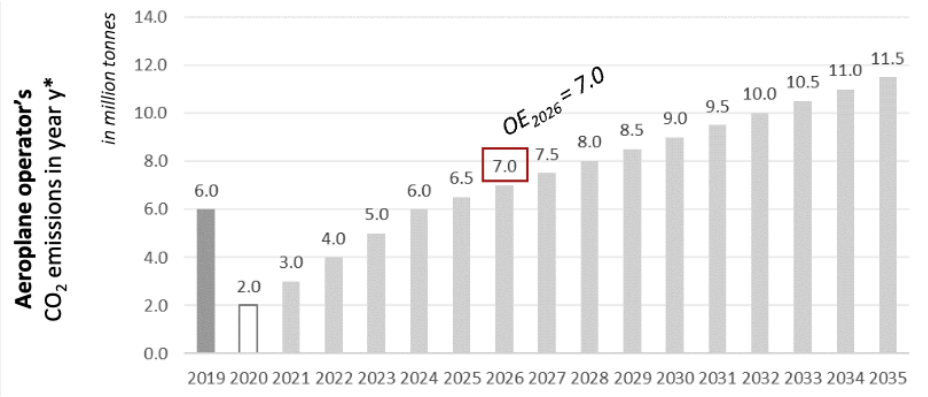
Figure A2 - Calculation of Sector Growth Factor (SGF_{2026})



Source: ICAO, Volume IV: Procedures for demonstrating compliance with CORSIA

Following ICAO's example, the illustrative airline emits 7.0 MtCO2 in 2026. Consequently, the airline's offsetting requirements under CORSIA amount to 1.1 MtCO2, resulting from the multiplication of the airline's emissions in any given year (7.0Mt in 2026) by the SGF in that same year (15%).

Figure A3 - Calculation of Airlines' emissions (OE_{2026})



Source: ICAO, Volume IV: Procedures for demonstrating compliance with CORSIA

Assumptions and limitations of the model

It is important to note that the Abatable demand model assumes that routes active as of 2024 will continue to operate in the future (i.e. it does not capture the entry or exit of routes to the market after 2024 until new data becomes available). It is important to be aware that routes may change their level of activity based on aviation market conditions.

As per official mandate, CORSIA offsetting requirements over 2033-2035 will be determined based on airlines' individual emissions. To estimate this, we require airlines' reported emissions from 2019 to be used as a baseline, data which is currently not publicly available. Instead, to estimate demand

over this period, we followed the same approach used to calculate demand over 2024-2032.

Forecasting supply

Our first step in estimating CORSIA-eligible supply was to gather a comprehensive dataset of project fundamentals from multiple carbon registries in the market, including those CORSIA-eligible for each phase:

- American Carbon Registry (ACR)
- Architecture for REDD+ Transactions (ART)
- BioCarbon Fund for Sustainable Forest Landscapes (ISFL)
- Climate Action Reserve (CAR)
- Forest Carbon Partnership Facility (FCPF)
- Global Carbon Council
- Gold Standard
- Isometric
- Premium Thailand Voluntary Emission Reduction Program (Premium T-VER)
- Verified Carbon Standard (VCS)

Data is harmonized to have an 'estimated annual credits' value for every project in the market to estimate supply based on projects' crediting periods – prioritizing using historical and official data over calculated annual credits.

Historical data (Priority #1). For example, for projects with historical issuance data, we used their average volume of credits issued over the number of years in which the project has issued credits, minus the yearly retirements.

Official data (Priority #2). When available, we used the official 'estimated annual credits' value – but only in cases where it was smaller than the project's average issuance per year, subject to the project having issued credits in the past.

Calculated data (Priority #3). For cases where these data were unavailable, we used median estimated annual credits at the project type level. We used the median rather than the average as it is a statistical measure less sensitive to extreme values.

For example:

1. Project A – Project ID GS12533 – the average issuance per year (historical data) is 10.6 kilotons, smaller than the 40 kiloton official estimated annual credits (official data). Hence, we use the former value.
2. Project B – Project ID VCS425 – the average issuance per year is 14 kilotons (historical data), which is larger than the 8.1 kiloton official estimated annual credits (official data). Hence, we use the latter value.
3. Project C – Project ID CAR1570 – has no average issuance per year (historical data) nor estimated annual credits (official data). Hence, we use the median value of the project type's estimated annual credits – 63.7 kilotons (calculated data).

Duration of crediting periods

After creating an "estimated annual credits" value for every project, we collected the different crediting options for each methodology under each

of the registries, obtained the minimum, maximum, and average durations for each, and created a supply scenario for each.

This addresses the uncertainty associated with a project's crediting period length. The range of years is typically determined by the methodology or protocol used, or by the guidelines of the relevant standard, reflecting the nature of different mitigation activities and technologies.

Forestry projects developed in Mexico under CAR's Mexico Forest Protocol, for example, are eligible to issue credits over 30-100 years depending on the project's permanence commitment and on the successful monitoring of the project's mitigation outcomes. Meanwhile, renewable energy projects registered under VCS can typically issue credits for up to five years, having the option to renew the crediting period up to two times – i.e. a total of 15 years, aligning with the average lifecycle of renewable energy projects of 25 years.

Illustrated example: Project ID GS1090 under methodology AMS-II.G

1. **Minimum duration scenario** – the minimum crediting period under this methodology and registry amounts to five years. Since this project started issuing credits in 2020, it would not be expected to issue credits from 2025 onwards under this scenario.
2. **Maximum duration scenario** – the maximum crediting period under this methodology and registry amounts to 15 years. Since this project started issuing credits in 2020 under this scenario, it would issue credits for an additional ten years i.e. 2025-2034.
3. **Average duration scenario** – the average crediting period under this methodology and registry amounts to ten years. Since this project started issuing credits in 2020, it is expected to continue issuing credits for an additional five years i.e. 2025-2029.

The role of project status

With estimated annual credits and crediting periods available at the project level, we accounted for the uncertainty of effective credit issuance based on the project status. To do this we harmonized different project status values and added a materialization rate to each of these based on the project's status. For example, we assume that 100% of the estimated annual credits from projects with a "Verified" status will materialize, whereas for projects with an "Under validation" status, we assume an 80% rate.

CORSIA-eligibility

Finally, to estimate the CORSIA-eligible units available as supply we considered five layers of eligibility, based on ICAO's guidelines:

1. **Eligibility of registry**. The project must be registered and the units must be issued under any of the standards approved by ICAO for supplying units to CORSIA for the respective phase. As of 01 June 2026 there are ten standards eligible for CORSIA supply.
2. **Vintage eligibility**. Eligible units must represent emissions reductions, avoidance or removals that happened on or after 01 January 2021 and until 31 December 2026 for the First Phase, and

until 31 December 2029 for the Second Phase. Projects with units with these vintages are considered an eligible source of supply.

3. **Crediting period eligibility**. A project's first crediting period must have started on 01 January 2016 or later.
4. **Methodology and unit exclusion**. Projects must follow a methodology or protocol from the eligible standard, but not methodologies excluded by ICAO.

Once the units have been issued according to the eligibility conditions above, they must be authorized by the host country and properly accounted for. Our model captures these additional conditions for the assessment of current eligibility, CORSIA alignment, and potential supply from new projects in the pipeline.

5. **Letters of authorization (LoA) by host countries.** We gather intelligence from external (IETA, UNFCCC) and internal sources (leveraging Abatable's extensive network of project developers) to identify which governments have granted projects LoAs to date. Once a country has issued a LoA, it is assumed that they will continue to grant such authorizations throughout CORSIA's First and Second Phases. In cases where a LoA has not been granted to a project, we determine the likelihood of a jurisdiction issuing an LoA in the future, considering five additional elements:
    i. Whether the country has issued regulation on carbon pricing and particularly, on Article 6 of the Paris Agreement.
    ii. Whether the country has issued an LoA in the past.
    iii. Whether the country has signed a bilateral Article 6 cooperation agreement with the government of another country.
    iv. Whether the host country has appointed a designated national authority (DNA) overseeing climate policy in the context of Article 6 of the Paris Agreement.
    v. Whether the host country has previous carbon market experience via participation in the Clean Development Mechanism of the Kyoto Protocol.
    vi. Whether the host country has prepared and published a Biennial Transparency Report or similar country report to the UNFCCC indicating the authorization and conducting the corresponding adjustment of the national mitigation.
    vii. Whether there have been any revocations of LoA in the past.

If a jurisdiction has already issued a LoA and made a corresponding adjustment, then the model considers these units to be fully **CORSIA-eligible** and available in the market for any airline to use towards their CORSIA obligations.

If a jurisdiction meets elements i to vii above, the country is considered to have a robust Article 6 preparedness and a high likelihood to issue an LoA authorizing units for CORSIA use. When host countries have a high likelihood of authorization, then the model assumes that the units issued from eligible standards to projects in that jurisdiction are **CORSIA-aligned**.

If a project has not issued units yet, but is located in a host country that is likely to issue a LoA, then the project's potential issuance would be classified as **CORSIA-aligned pipeline.**

Subsequently, by aggregating data at the market level, we are able to observe the market's CORSIA supply over time.

The six scenarios indicate how CORSIA supply could change under different growth pathways.

Assumptions and limitations of the model

- The model is not yet capturing the requirement of carbon insurance under CORSIA.
- The model does not capture the entry of new projects into the market. Rather, it focuses on projects already registered in the corresponding eligible standards.

Disclaimers

Abatable's CORSIA forecasting dynamically adapts to policy changes, such as the issuance of LoAs, in near real-time. It leverages the latest data from standards and registries, along with insights from our extensive network of project developers, all subject to rigorous due diligence.

Annex 5: NDCs and host country authorization

CORSIA supply is contingent on host countries granting authorizations for units to become CORSIA-eligible. The process for assessing and granting LoAs requires alignment of authorizations with national climate policy, national targets, and institutional capacity, creating potential bottlenecks which can become options for improvement and for the creation of economic opportunities for the country.

Nationally Determined Contributions (NDCs), sectoral conditionality, and national policies

Under the Paris Agreement, parties must communicate NDCs every five years reflecting their highest possible ambition, with robust accounting to avoid double counting of emission reductions. Countries are encouraged to adopt economy-wide targets, but countries may also set targets by sector, typically distinguishing between reductions they will deliver unconditionally through domestic resources and those contingent on international finance or technology support.

Typically, countries have defined a set of policies and measures across sectors that will deliver the amount of emissions reductions needed to achieve national targets. Where countries publish detailed NDC implementation plans, these set out the specific policies and measures and associated financial requirements underpinning each sectoral target. In some cases, sectoral policies may overlap or interact with emission reduction activities already in progress. That is the case for carbon projects that generate verifiable emission reductions in sectors that can contribute to NDC achievement within a given period.

Article 4 of the Paris Agreement encourages countries to prepare Long-Term Low Emission Development Strategies (LT-LEDS) to guide the transition to Paris-aligned pathways towards mid-century, feeding into successive NDC cycles. The rationale for LT-LEDS brings a layer of analysis to any decisions on subsequent NDCs and to the possibility of authorizing units for uses outside the host country. National climate policies focusing on specific areas such as energy or forestry policies set out the approach to countries achieving short-term NDC targets and longer-term climate goals. Carbon projects are complementary to this. A coherent approach across targets and policies enables countries to understand where authorization of units for international markets, such as CORSIA, fit in the national decarbonization pathway, and defines whether a country pursues international cooperation under Article 6 of the Paris Agreement for enhanced ambition.

From an implementation perspective, unconditional targets are anchored in domestic policy and often funded with public and private financial resources available in the country; conditional reductions depend on international finance, technology transfer, or capacity support, which must be negotiated and agreed upon. This distinction is material to Article 6 authorization decisions: reductions that exist only if international finance materializes create a different authorization environment than those anchored in domestic policy commitment. Experience to date shows that

international engagement on carbon markets and Article 6 can unlock additional climate and carbon finance for host countries, as in the case of Thailand, Chile, Ghana, or Rwanda.

Article 6 and NDC targets

Under Article 6 of the Paris Agreement, parties may voluntarily cooperate on NDC implementation to enable higher ambition. International carbon markets create pathways for international and private capital to finance parts of countries' NDCs and specific carbon projects, and can enable technology and skills transfer, making authorization a significant economic and environmental opportunity for host countries.

That opportunity comes with a key constraint. Any mitigation units authorized for use outside of the host country, such as CORSIA, are subject to a corresponding adjustment, which is the accounting mechanism agreed under the UNFCCC to accurately consider their impact in the host country's NDC accounting. If units are authorized for international use, they shall not be considered as part of national mitigation progress, and shall not be accounted for the NDC.

Over-authorization ("over-selling") therefore risks jeopardizing national targets, potentially forcing revocation of granted authorizations and damaging investability and future access to international climate finance.

Designated National Authorities – as government focal points for authorizations – should assess each authorization deliberately, considering how Article 6 projects fit into broader national climate targets and distinguishing between unconditional and conditional NDC portions.

Retaining a share of mitigation outcomes towards own NDCs can also serve as a practical buffer against revocation risk.

National Article 6 engagement

For units to become CEEUs, host countries must authorize their use for Other International Mitigation Purposes (OIMP) and apply corresponding adjustments in UNFCCC reporting. Countries with strong Article 6 engagement typically have the following in place:

- **DNA appointment**: A designated government body to manage authorization requests and safeguard national targets.
- **National registry**: Infrastructure to record issuance, transfer, and cancellation of units, ensuring robust accounting.
- **Article 6 framework**: A decree, policy, or operations manual clarifying governance, eligible project types, approval pathways, and how proceeds are shared.
- **Authorization process**: A defined pathway in the host country with timelines and responsible entities, giving project developers predictability.
- **Initial report**: A submission to the UNFCCC outlining each cooperative approach, expected mitigation, and how corresponding adjustments will be tracked.
- **LoAs issued**: Letters of Authorization committing the host country to apply corresponding adjustments, specifying volumes, vintages, and CORSIA scope.
- **Corresponding adjustments applied**: Irreversible accounting entries reported in Biennial Transparency Reports, confirming unit eligibility for CORSIA.

- **CEEUs issued to date**: Existing issuances signal operational capacity and indicate likely future supply.
- **Bilateral agreements**: Concluded agreements signal political willingness to engage in international carbon trading, though they're not a prerequisite for supplying CEEUs.

Building institutional, legal, and operational readiness across these areas positions countries to supply CEEUs and capture the opportunity CORSIA offers.

DNAs should assess each authorization deliberately, considering how Article 6 projects fit into broader national climate targets and distinguishing between unconditional and conditional NDC portions. Retaining a share of mitigation outcomes towards the host country's own NDC can serve as a practical buffer against revocation risk. Over-authorization – committing too many reductions to international use – risks jeopardizing national targets, forcing revocation of granted authorizations, and damaging a country's access to international climate finance.

ASEAN Article 6 engagement

Within ASEAN, countries have shown varying levels of engagement with Article 6 to date, which bears directly on where CORSIA supply is most likely to materialize in the near term.

Thailand, Cambodia, and Lao PDR have so far capitalized the most on Article 6 readiness. Thailand has completed the first internationally transferred and correspondingly adjusted ITMO under Article 6.2 with Switzerland, and has an operational authorization process under its International Carbon Credit Guideline. Cambodia and Lao PDR have both issued LoAs and have CORSIA-eligible units. Viet Nam has enacted a detailed legal framework for Article 6 transfers under Decree 112/2026 but has yet to issue any LoAs. Singapore has an extremely robust carbon framework but operates predominantly as a buyer country, procuring ITMOs inbound under bilateral Implementation Agreements rather than supplying credits outward. The remaining countries – Indonesia, Malaysia, the Philippines, Myanmar, Brunei, and Timor-Leste – are at varying stages of readiness, with several having enacted or advanced domestic carbon frameworks in 2025 and 2026.

Figure A4: ASEAN Article 6 readiness for CORSIA supply

Favorable: in place and operational | In progress: under construction or partial | Opportunity: absent or constrained

Feature	Thailand	Cambodia	Vietnam	Laos	Singapore	Malaysia	Indonesia	Myanmar	Philippines	Brunei	Timor-Leste
Article 6 framework	ICC Guideline (Aug 2025)	Operations Manual (2024)	Decree 112/2026/ND-CP	Carbon Credits Decree, partial	ICC Framework under CPA 2022	NCMP (April 2026)	PR 110/2025; sub-regs pending	Framework not published	LCEA in draft; energy circular only	Framework not published	Framework in draft
Authorisation process	DCCE process; DG signs LoA	Four-stage process defined	25-day decision window	Process partial; no template	Four-stage via IAs	NRES pathway under NCMP	Forestry pathway only	Process ad hoc; bilateral only	Process limited to energy (DOE)	Process not established	Process not established
National registry	TCC Registry (TGO)	Under development	National Registration System (MAE)	CCIS mandated, not live	NEA registry in development	Under development	SRUK in development	Registry flagged, not built	Registry preliminary; not live	No registry; facility MRV only	No registry
DNA appointed	DCCE under MNRE	Ministry of Environment	MAE	Ministry of Agriculture and Environment	Not designated; buyer country	NRES	Ministry of Environment	MONREC Climate Change Division	DENR	BCCS within MoFE	Min. Tourism and Environment
Initial Report	Submitted; CH, JP scopes	Submitted; two activities	Not submitted	Status unconfirmed; transfers reported	Not submitted; pending first transfer	Not submitted	Not submitted	Not submitted	Not submitted	Not submitted	Not submitted
CORSIA units	T-VER approved; LoAs unconfirmed	VCS 3052 and 2925 listed	None available	VCS 2924, 3204 listed	None available	None labelled	None available	PACM eligibility pending ICAO	None labelled	None labelled	None issued
Corresponding adjustments	First CA applied (CH, 2024)	Not yet triggered	Formalised, not applied	Applied per BTR1	None inbound; expected 2026	None recorded	None recorded	None recorded	None recorded	None recorded	None recorded
LoAs issued	E-bus, JCM solar confirmed	Three issued, all CORSIA	None issued	Three in BTR1	Joint Committee co-authorisation	None issued	None issued	One (CCC cookstoves to KR)	None issued	None issued	None issued
Bilateral agreements	CH, JP, SG operational; NZ exploring	JP, KR agreements; SG MoU	JP, SG, KR agreements	JP JCM; SG MoU	Multiple IAs (Ghana, etc.)	SG MoU; JP in talks	JP JCM; KR, SG MoUs	JP JCM; KR project-level	JP, SG Article 6.2 agreements	SG MoU only	None identified

Note on Singapore: the country is a buyer under its International Carbon Credit framework. Its CORSIA-units row is N/A because the framework governs inbound ITMO procurement rather than host-country supply.

Country comparison matrix, as of May 2026

Technical Annex: Country-level analysis

This annex reviews each ASEAN member state's current climate targets and policies, carbon projects operating within the country that currently provide or present opportunities for CORSIA supply, and the country's engagement with Article 6 to date. **See summary of emissions levels and targets in table A33**.

CORSIA supply flows from projects within host countries, which must grant specific authorizations for units to become CORSIA-eligible. Authorizations directly impact a country's national accounting and NDC targets, and must therefore be assessed within the broader context of a country's overall climate strategy and institutional capacity.

The following profiles cover five elements:

NDC targets – A summary of current NDC targets and conditionality, including total abatement volumes and, where submitted, NDC 3.0 targets to 2035. Units authorized for CORSIA use are correspondingly adjusted and removed from a host country's national accounting, so DNAs must assess each authorization against the country's broader NDC trajectory.

NDC sectoral targets – Where presented, a breakdown of abatement volumes and associated financial requirements by IPCC (Intergovernmental Panel on Climate Change) sector in the country's NDC or climate policies. Where sectoral data is absent or not publicly accessible, this is noted. Sectoral targets give a more granular picture of where mitigation is expected to be delivered and at what cost, which is relevant context for assessing which project types in a given country have headroom for authorization without undermining NDC achievement.

National climate policies – A summary of the key domestic policies and measures through which a country intends to deliver its NDC commitments, that can be complemented by carbon projects to achieve NDC targets.

CORSIA supply landscape – Current and forecast supply of CEEUs from that country, drawn from Abatable's project database across three categories: CORSIA-eligible projects that have issued CEEUs; CORSIA-aligned projects that have issued units that could become CEEUs with authorization and a corresponding adjustment; and early-stage pipeline projects not yet issuing units but are CORSIA-aligned with potential supply to vintage 2035. This gives a picture of both the supply available today and the pipeline that could be unlocked with further host country authorization.

The diagrams in this section show how the CORSIA supply landscape in a country aligns with economic sectors, giving countries an indication of how this supply could contribute to NDC targets or be authorized for CORSIA and thus removed from national accounting. This can guide DNAs' Article 6 strategies and authorization decision in the context of meeting their own targets.

Article 6 readiness – A structured assessment of nine indicators of a country's Article 6 readiness, as set out in Annex 5. Countries with strong Article 6 readiness are well placed to supply CEEUs in the near term, as they may have established greater institutional and regulatory readiness to participate. Each indicator is rated against a three-point scale:

Favorable – the country has operationalized this Article 6 element.
In progress – the country is in the process of operationalizing this element of Article 6.
Opportunity – the country has not clearly operationalized or is currently developing this element of Article 6.

Brunei Darussalam (Brunei)

Table A3: Brunei's NDC targets

	Target	Total abatement / Target emission level	Conditionality
Enhanced NDC 2021-2030	20% economy-wide reduction relative to BAU	Total abatement of ~5.9 MtCO2	Unconditional
NDC 3.0 2026-2035	20% economy-wide reduction relative to BAU	Total abatement of ~6.2 MtCO2	Fully conditional

Table A4: Brunei's NDC national strategies

Rather than sectoral abatement volumes, Brunei's NDC sets programmatic targets across ten strategy areas. No financial breakdown is provided.

Sector / Cross-cutting area	Programmatic target
Industrial Emissions	Zero-routine flaring under 'As Low As Reasonably Practicable' principles
LULUCF	55% forest reserve; plant 500,000 new trees
Transport (EVs)	60% electric vehicle market share
Energy (Renewables)	30% renewable energy capacity
Energy (Efficiency)	10% emissions reduction via power management
Waste Management	1 kg/person/day municipal waste to landfill
Carbon Pricing	Comprehensive assessment and carbon price for the industrial sector
Climate Resilience	National climate risk framework and long-term impact assessments
Carbon Inventory	Mandatory monthly/yearly reporting and real-time online system
Awareness & Education	Climate mitigation in national education curriculum and outreach programs

LULUCF = Land Use, Land-Use Change, and Forestry.

National climate policies

Brunei's policy landscape reflects a jurisdiction navigating both a hydrocarbon-dependent economy and its stated emissions-reduction commitments. The Energy White Paper simultaneously targets 30% renewable capacity, 954,000 megawatt-hours (MWh) of generation and a 45% reduction in energy intensity by 2035, while pursuing oil and gas production exceeding 650,000 boe/d – complicating conservative baselines for carbon projects. The forestry sector offers credible mitigation potential, with targets to increase national forest reserve from 41% to 55% of land area and a reduced-cut policy limiting annual timber logging to 100,000 cubic meters. Cross-cutting governance is at an earlier stage: the Mandatory Reporting Directive on Greenhouse Gas (April 2023) introduced quarterly and annual reporting obligations, and a National Climate Vulnerability Assessment is underway, expected to conclude by 2027.

CORSIA supply landscape

No projects in Brunei have issued CEEUs to date, and no pipeline of CORSIA-aligned projects has been identified. Brunei therefore has no current or forecast CEEU supply to vintage 2035. Brunei may look to develop a domestic carbon market as an environmental and economic opportunity.

Table A5: Brunei's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	None published. NDC 3.0 (October 2025) confirms Brunei is studying the feasibility of voluntary cooperation as part of a domestic carbon pricing assessment.	Opportunity
Authorization process	None established. No authorization template, fee schedule, timeline, or approval workflow published.	Opportunity
National registry	None. The mandatory carbon emissions reporting system functions as an MRV and inventory tool only; it does not issue or track credits.	Opportunity
DNA appointed	Not formally designated to UNFCCC.	Opportunity
Initial Report	Not submitted to UNFCCC CARP.	Opportunity
LoAs issued	None.	Opportunity
Corresponding adjustments	None recorded. No BTR submissions record a first transfer.	Opportunity
CORSIA units	None. No LoAs have been issued and no credits carry a CORSIA eligibility label.	Opportunity
Bilateral agreements	MoU with Singapore to identify opportunities under Article 6.2, referenced in NDC 3.0 (October 2025). No implementation agreement identified.	In progress

Cambodia

Table A6: Cambodia's NDC targets

	Target	Total abatement / Target emission level	Conditionality
Enhanced NDC 2021-2030	41.7% reduction below BAU by 2030	Total abatement of 64.6 MtCO2 by 2030	Unspecified, but notes target conditional on international support
NDC 3.0 2026-2035	55% reduction below BAU by 2035	Total abatement of 73.3 MtCO2 by 2035	51.7 MtCO2 conditional on international support

Table A7: Cambodia's NDC sectoral targets

Sector	NDC 2021-2030 abatement (MtCO2)	NDC 2021-2030 est. finance (US$ million)	NDC 2026-2035 unconditional abatement (MtCO2)	NDC 2026-2035 conditional abatement (MtCO2)	NDC 2026-2035 est. mitigation finance (US$ million)
LULUCF	38.1	3,466.0	8.0	32.0	944.0
Energy	13.7	672.0	9.0	14.3	20,368.0
Agriculture	6.2	49.0	0.0	2.2	321.0
IPPU	5.9	79.0	1.8	0.4	260.0
Waste	0.6	1,490.0	2.8	2.6	796.0

NDC 2021-2030 does not disaggregate unconditional and conditional targets by sector. NDC 2026-2035 estimates ~US$9.5 billion for unconditional and ~US$22.5 billion for conditional commitments; breakdown not available for every sector. LULUCF = Land Use, Land-Use Change, and Forestry. IPPU = Industrial Processes and Product Use.

National climate policies

Cambodia's climate policy landscape is among the more detailed in the region. NDC 3.0 and the Long-Term Strategy for Carbon Neutrality (LTS4CN) together cover all major sectors, supported by the Power Development Master Plan 2022-2040 (phased coal moratorium, scaled solar and hydro), the National Energy Efficiency Policy 2022-2030 (binding sectoral efficiency targets), fleet electrification and fuel efficiency standards in transport, Alternate Wetting and Drying across 90,000 hectares of rice cultivation, and biogas expansion to nearly 100,000 households. The LTS4CN adds longer-horizon commitments including agroforestry, clean cooking, CCS for cement, and a full deforestation halt by 2045.

CORSIA supply landscape

Cambodia has a total CORSIA-eligible or aligned volume of 34.7 MtCO2 to 2035. This can contribute to its NDC targets (total abatement of 64.6 MtCO2 by 2030 and 73.3 MtCO2 by 2035), or can be authorized for use under CORSIA and not accounted for by Cambodia towards its national targets. 1.3 MtCO2 of this volume is already authorized and labeled as CEEUs, and therefore must be canceled from Cambodia's national accounting and not used towards NDC targets.

Two projects in Cambodia have issued CEEUs to date, issuing 1.3 MtCO2, with potential to produce an additional 19.3 MtCO2 to vintage 2035. Three further operational projects are CORSIA-aligned and have issued 0.6 MtCO2 that could become CEEUs with authorization and corresponding adjustment, with an additional 3.0 MtCO2 potential to 2035. Twelve early-stage projects have not yet issued units but could contribute a further 10.5 MtCO2 by 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Cambodia's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A5 maps CORSIA-aligned projects in Cambodia to their economic sectors.

Figure A5: Projects within Cambodia with eligible or aligned CORSIA supply

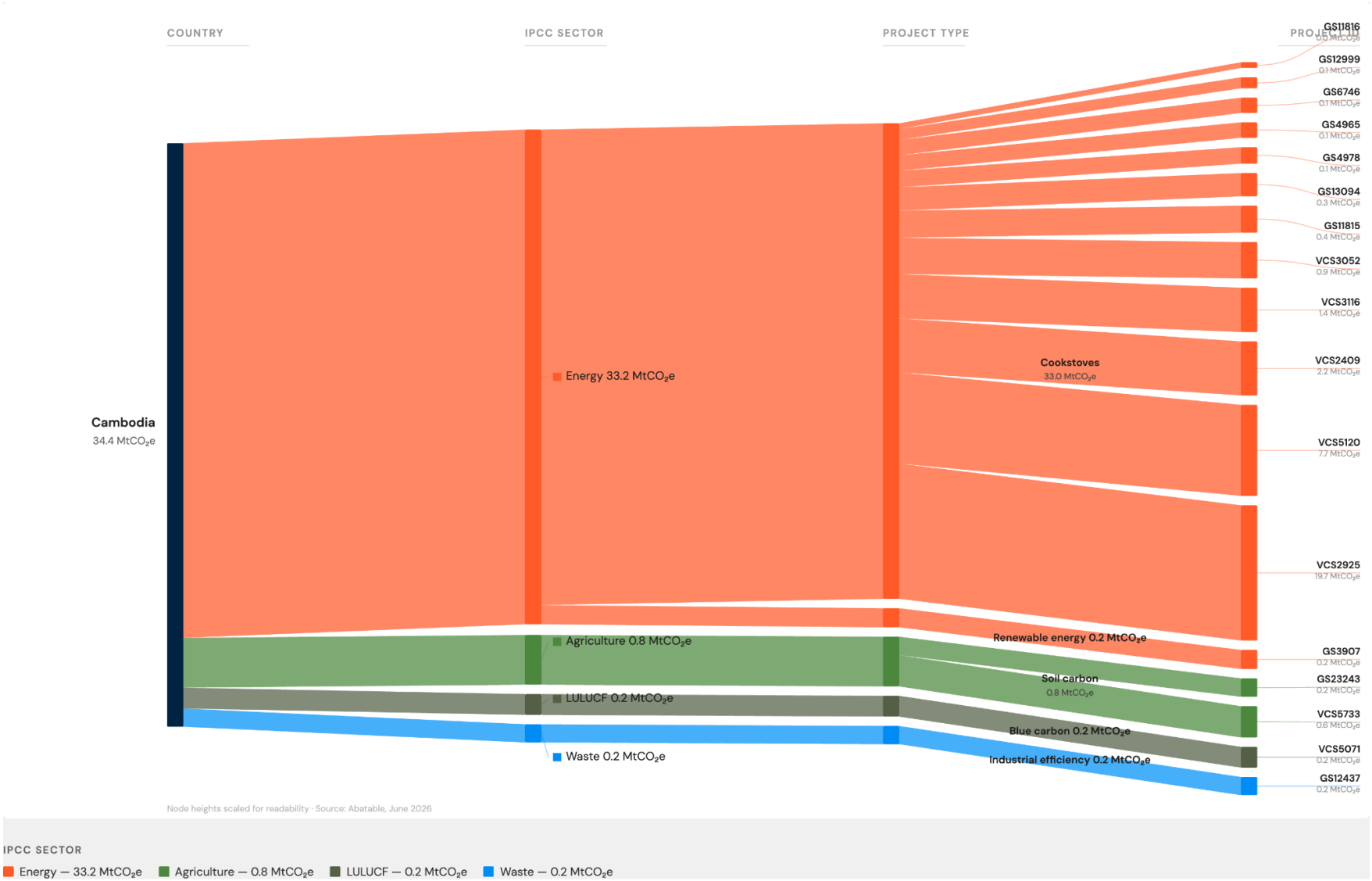


Table A8: Cambodia's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	Operations Manual for the Implementation of Article 6 (2024) sets out a positive list, eligibility criteria, and approval workflow.	Favorable
Authorization process	Four-stage process: Project Idea Note and Letter of No Objection; Project Design Document and LoA request; implementation and monitoring; verification and issuance approval.	Favorable
National registry	Under development; UNFCCC and independent registries used in the interim.	In progress
DNA appointed	Ministry of Environment, supported by the Carbon Crediting Secretariat and REDD+ Secretariat.	Favorable
Initial Report	Submitted to UNFCCC CARP, covering VCS 3052 and VCS 2925.	Favorable
LoAs issued	Three: VCS 3052, VCS 2925, VCS 3116 cookstoves. All include CORSIA authorization.	Favorable
Corresponding adjustments	No corresponding adjustments triggered yet; BTR1 (December 2024) does not record a first transfer.	In progress
CORSIA-eligible units	VCS 3052 and VCS 2925 have issued units on the Verra registry with a CORSIA First Phase label, available for airline compliance.	Favorable
Bilateral agreements	Article 6.2 agreements with Japan and the Republic of Korea; MoU with Singapore.	Favorable

Indonesia

Table A9: Indonesia's NDC targets

	Target	Total abatement / Target emission level	Conditionality
Enhanced NDC 2021-2030	43.2% reduction below BAU by 2030	Total abatement of 1,240.0 MtCO2 by 2030	31.89% (915.0 MtCO2) unconditional; 11.31% (325.0 MtCO2) conditional on international support
NDC 3.0 2031-2035	Net emissions limited to 1,257.7 MtCO2 (low growth) or 1,488.8 MtCO2 (high growth) by 2035	Target emission level of 1,257.7-1,488.8 MtCO2 by 2035	Low and high growth scenarios both conditional; unconditional baseline caps net emissions at 1,787.0 MtCO2

Table A10: Indonesia's NDC sectoral breakdown

Sector	NDC 2021-2030 unconditional abatement (MtCO2)	NDC 2021-2030 conditional abatement (MtCO2)	NDC 2031-2035 unconditional net emissions target (MtCO2)	NDC 2031-2035 conditional net emissions target low growth (MtCO2)	NDC 2031-2035 conditional net emissions target high growth (MtCO2)
LULUCF	500.0	229.0	-43.4	-168.4	-206.9
Energy	358.0	88.0	1,419.1	1,109.8	1,336.3
Agriculture	10.0	2.0	79.6	74.7	75.7
IPPU	7.0	2.0	93.6	73.1	78.3
Waste	40.0	3.5	238.0	168.5	205.7

Indonesia does not provide a sector-by-sector financial breakdown. Overarching investment requirements are ~US$281 billion for unconditional and ~US$285 billion for conditional targets by 2030, and ~US$472.6 billion total for the 2035 target. Indonesia targets the LULUCF sector to become a net sink. LULUCF = Land Use, Land-Use Change, and Forestry. IPPU = Industrial Processes and Product Use.

National climate policies

Indonesia's policy landscape is among the most complex in Southeast Asia, combining a detailed sectoral mitigation framework, an explicit just transition agenda, and one of the region's most sophisticated climate finance tracking systems. The National Energy General Plan (NEGP) mandates at least 23% renewable energy in the primary mix by 2025, capping coal production at 400 million tons from 2019 and eliminating coal exports by 2046; Government Regulation No. 40/2025 updates these targets to 19–23% renewables in 2030, scaling to 70–72% by 2060. The FOLU Net Sink 2030 strategy commits to restoring 2 million hectares of peatlands and 8.3 million hectares of degraded land, with a Forest Reference Emission Level set at 0.264 GtCO2e annually. The JETP Comprehensive Investment and Policy Plan 2023 overlays 37 gigawatts (GW) of variable renewable deployment by 2030 and early retirement of up to 3,000 megawatts (MW) of coal capacity, supported by a Climate Budget Tagging system tracking IDR 523.63 trillion (2018–2024).

CORSIA supply landscape

Indonesia has a total CORSIA-aligned volume of 41.7 MtCO2 to 2035. This can contribute to its NDC targets (1,240 MtCO2 abatement by 2030; keeping net emission level between 1,257-1,787 MtCO2 by 2035), or some may be authorized for use under CORSIA, and not accounted for by Indonesia towards its national targets.

No projects in Indonesia have issued CEEUs to date, and there are no current CORSIA-aligned issuances that could become CEEUs. However, thirteen early-stage CORSIA-aligned projects not yet issuing units represent a potential pipeline of 41.7 MtCO2 by 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Indonesia's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A6 maps CORSIA-aligned projects in Indonesia to their economic sectors.

Figure A6: Projects within Indonesia with eligible or aligned CORSIA supply

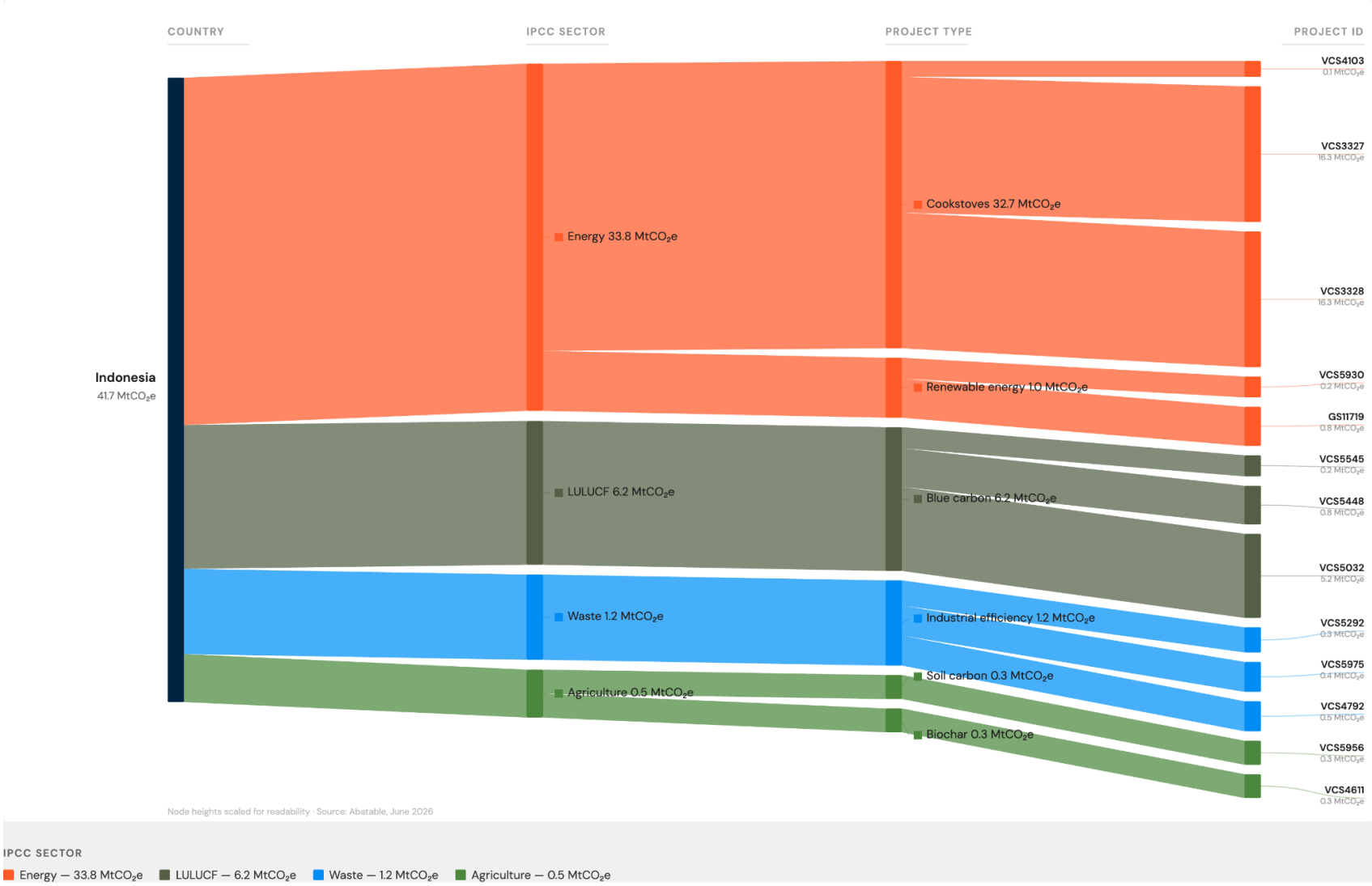


Table A11: Indonesia's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	PR 110/2025 establishes carbon market governance requiring ministerial authorization for international transfers. Implementing regulations due from line ministries by October 2026; only the Ministry of Forestry has issued these to date.	In progress
Authorization process	Authorization granted by Minister of Environment on recommendation of relevant sectoral minister. Complete pathway exists only for forestry; no standardized process for other sectors.	In progress
National registry	Carbon Unit Registry System (SRUK) introduced under PR 110/2025 but not yet operational. Mutual Recognition Agreements with Verra (October 2025) and Gold Standard (May 2025) enable dual registration in the interim.	In progress
DNA appointed	Yes. Ministry of Environment.	Favorable
Initial Report	Not yet submitted to UNFCCC CARP.	Opportunity
LoAs issued	None.	Opportunity
Corresponding adjustments	None. BTR1 does not record a first transfer.	Opportunity
CORSIA units	None. No Indonesian credits carry a CORSIA eligibility label.	Opportunity
Bilateral agreements	JCM with Japan (active, October 2024 MRA); Article 6.2 bilateral agreement with Norway (June 2025, building on 2022 MoU); MoU with South Korea (June 2024); MoU with Singapore (2022)	Favorable

Lao PDR

Table A12: Lao PDR's NDC Targets

	Target	Total abatement / Target emission level	Conditionality
Updated NDC 2020-2030	60% GHG emission reduction below 2030 BAU baseline; conditional measures targeting net zero by 2050	Total abatement of ~62.0 MtCO2 in 2030 (unconditional); average additional annual abatement of ~45.7 MtCO2 between 2020-2030 (conditional)	60% reduction is unconditional. Conditional target presented sectorally as average annual reductions in line with net zero by 2050

Lao PDR has not yet submitted its NDC setting targets to 2035.

Table A13: Lao PDR's NDC Sectoral Targets

Sector	Unconditional target: average annual abatement (MtCO2/y)	Conditional target: average annual abatement (MtCO2/y)	Estimated conditional mitigation financial needs (US$ million)
LULUCF	1.1	45.0	1,700.0
Energy	2.5	0.2	2,220.0
Transport	0.3	0.1	730.0
Energy Efficiency	0.1	0.3	30.0
Agriculture	0.0	0.1	65.0
Waste	0.0	0.0	17.0

Unconditional finance not specified by sector. LULUCF = Land Use, Land-Use Change, and Forestry.

National climate policies

Lao PDR's mitigation architecture is weighted heavily towards land use and hydropower. The NDC Implementation Plan targets an unconditional annual deforestation halt of 1.1 MtCO2, alongside a conditional goal to reach 70% forest cover, requiring 45 MtCO2 of annual reductions; the Forestry Strategy to 2035 further targets 55 MtCO2 of sectoral reductions through restoring 6 million hectares of forest and afforesting 500,000 hectares. In energy, the NDC Implementation Plan commits unconditionally to expanding installed hydropower capacity to 13 GW, with a conditional 1 GW of combined solar and wind. Agricultural policy sets a conditional target of 128,000 tCO2e per year from Alternate Wet Dry cultivation across 50,000 hectares of lowland rice. Cross-cutting instruments include environmental taxation under the National Green Growth Strategy and a Green Growth Promotion Center, though transport, waste, and industry remain comparatively less developed.

CORSIA supply landscape

Lao PDR has a total CORSIA eligible or aligned volume 23.6 MtCO2 to 2035. This can contribute to its 2030 NDC targets (60% GHG emission reduction below 2030 BAU baseline with conditional measures targeting net zero by 2050; 2035 NDC target not yet set), or some can be authorized for use under CORSIA, and not accounted for by Cambodia towards its national targets. 1.3 MtCO2 of this volume is already authorized and labeled as CEEUs, and therefore must be canceled from Lao PDR's national accounting and not used towards NDC targets.

Two projects in Lao PDR have issued CEEUs to date, issuing 1.3 MtCO2, with potential to produce an additional 4.9 MtCO2 to 2035. An additional eight projects are CORSIA-aligned and could supply 17.4 MtCO2 CEEUs by 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Lao PDR's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A7 maps CORSIA-eligible and aligned projects in Lao PDR to their economic sectors.

Figure A7: Projects within Lao PDR with eligible or aligned CORSIA supply

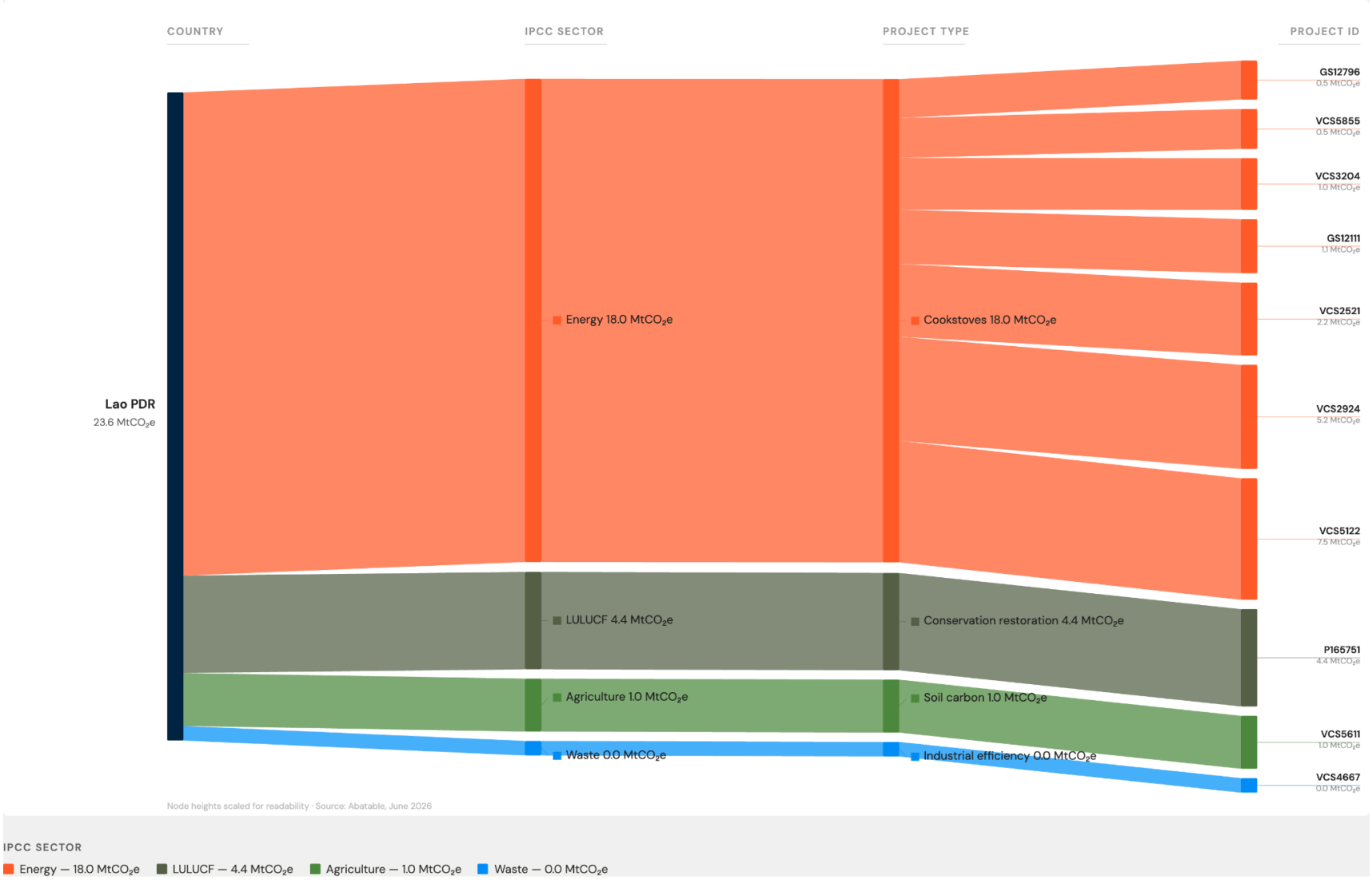


Table A14: Lao PDR's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	Decree on Carbon Credits establishes the domestic framework and designates MAE as the lead authority. Authorization pathway for project proponents remains incompletely defined.	In progress
Authorization process	General basis for government-level approval exists under the Decree. No published authorization template, fee schedule, or project proponent pathway. Minimum 10% credit retention applies to all international arrangements.	In progress
National registry	Decree mandates a Carbon Credit Information System under MAE. Operational status not publicly confirmed.	In progress
DNA appointed	Yes. Ministry of Agriculture and Environment (MAE).	Favorable
Initial Report	Unconfirmed. BTR1 reports a first transfer, which would ordinarily require prior submission to UNFCCC CARP.	In progress
LoAs issued	Three confirmed in BTR1: VCS 2924, VCS 3204, VCS 2521. None listed on the UNFCCC LoA Portal.	Favorable
Corresponding adjustments	Applied. BTR1 records adjustments for VCS 2924, VCS 3204, and VCS 2521 covering 1 January 2023 to 31 December 2032.	Favorable
CORSIA units	Available. VCS 2924 and VCS 3204 have CORSIA-eligible units on the Verra registry.	Favorable
Bilateral agreements	JCM with Japan (active); MoU with Singapore for Article 6.2 (July 2024).	Favorable

Malaysia

Table A15: Malaysia's NDC targets

	Target	Total abatement / Target emission level	Conditionality
Enhanced NDC 2021-2030	45% reduction in economy-wide carbon intensity against GDP compared to 2005 levels	Unquantified absolute volume; target is purely intensity-based	Entirely unconditional
NDC 3.0 2026-2035	Absolute reduction of 15-30 MtCO2 by 2035 from the projected peak level	Total abatement of 15.0-30.0 MtCO2 by 2035 (measured against a peak anticipated between 2029 and 2034)	Up to 20.0 MtCO2 unconditional; additional 10.0 MtCO2 conditional on international support

Malaysia's NDC Roadmap and Action Plan to 2030, which contains detailed sectoral abatement volumes and financial requirements, is not publicly accessible. No sectoral breakdown is therefore provided.

National climate policies

Malaysia has one of the more coherent climate policy frameworks in Southeast Asia. Detailed sectoral abatement volumes and financial requirements are contained within an NDC Roadmap and Action Plan to 2030 that is not publicly accessible, limiting the granularity available for authorization decisions. The National Energy Transition Roadmap targets 70% renewable electricity capacity by 2050 with 57 GW of solar PV and a moratorium on new coal plants through 2035, supported by the RM 2 billion National Energy Transition Facility. Industrial decarbonization is driven by CCUS clusters at Kasawari and Lang Lebah with PETRONAS, alongside sectoral pathways for cement and petrochemicals under the New Industrial Master Plan 2030. Forestry policy is anchored by an Ecological Fiscal Transfer mechanism providing RM 200 million annually to states for protecting Permanent Reserved Forests, aligned to the National REDD Plus Strategy's goal of reducing deforestation emissions by 3–6 MtCO2 per year. The National Carbon Market Policy (NCMP), published April 2026, formalizes Malaysia's Article 6 participation and introduces a carbon pricing assessment, making it one of the regional jurisdictions most clearly building domestic infrastructure to support structured authorization decisions.

CORSIA supply landscape

Malaysia has a total CORSIA-aligned volume of 1.4 MtCO2 to 2035. This can contribute to its NDC targets (45% reduction in economy-wide carbon intensity against GDP compared to 2005 levels by 2030; absolute reduction of 15-30 MtCO2 by 2035 from projected peak level), or some may be authorized for use under CORSIA, and not accounted for by Malaysia towards its national targets.

No projects in Malaysia have issued CEEUs to date. Two operational projects are CORSIA-aligned and have issued 0.04 MtCO2 that could become CEEUs with authorization and a corresponding adjustment. These two projects have the potential to issue an additional 0.04 million units by 2035. Five additional early-stage CORSIA-aligned projects have not yet issued units. In total, these projects could supply 1.3 MtCO2 by 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Malaysia's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A8 maps CORSIA-aligned projects in Malaysia to their economic sectors.

Figure A8: Projects within Malaysia with eligible or aligned CORSIA supply

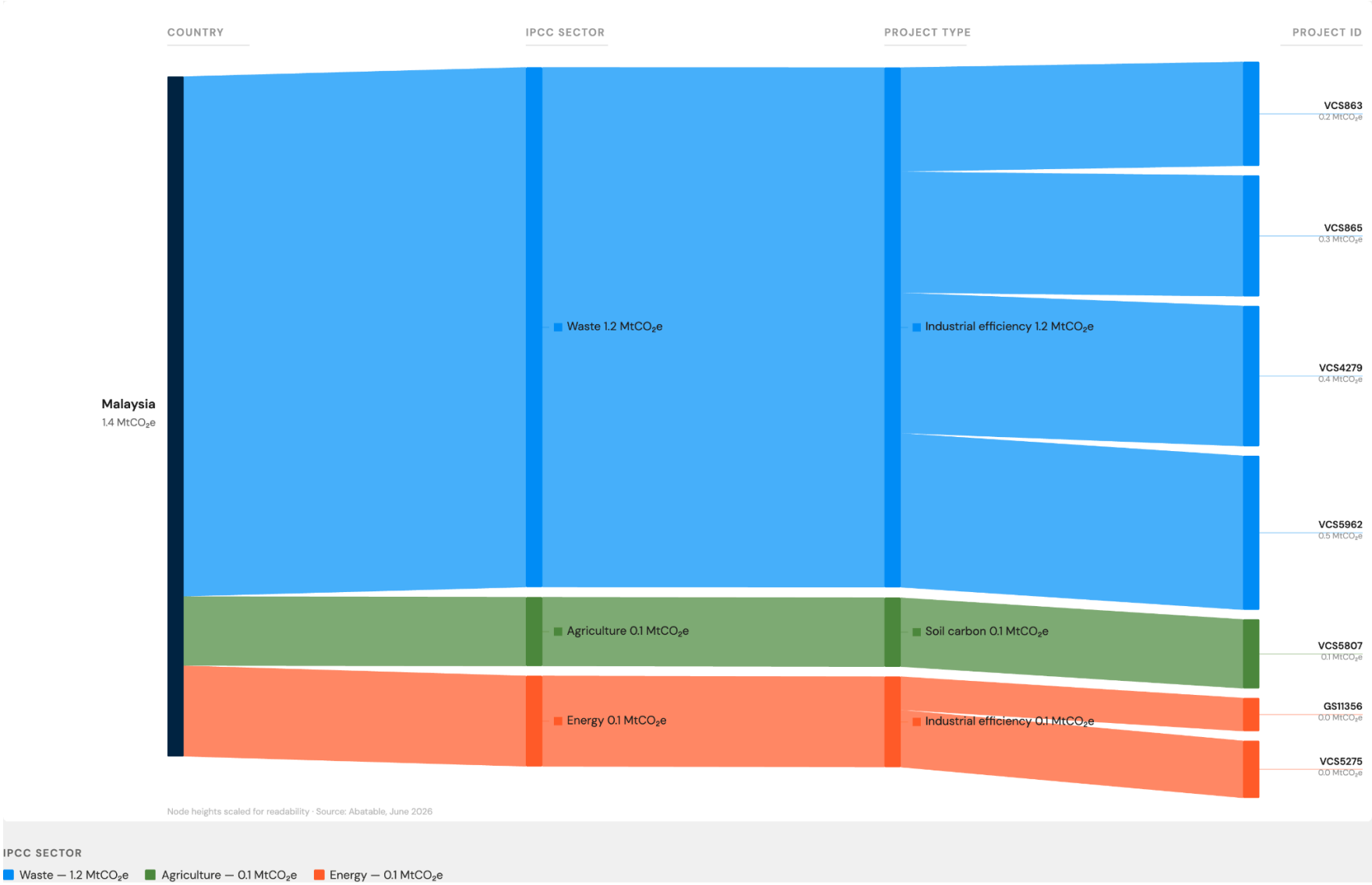


Table A16: Malaysia's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	National Carbon Market Policy (NCMP), published April 2026, formalizes Malaysia's Article 6 participation, sets out authorization processes for Article 6.2 cooperative approaches (including CORSIA) and Article 6.4 under PACM, and identifies eligible activity categories through a National Marginal Abatement Cost Curve. Specific activity-level guidance still to be issued.	Favorable
Authorization process	Defined under the NCMP. Project proponent submits to NRES or its designated entity, which registers the project and issues an acknowledgement. Formal authorization sought post-verification. For CORSIA supply, an additional CORSIA scope label issued by NRES is required before an ITMO can be authorized for CORSIA use.	Favorable
National registry	Under development as of May 2026.	In progress
DNA appointed	Yes. Ministry of Natural Resources and Environmental Sustainability (NRES).	Favorable
Initial Report	Not yet submitted to UNFCCC CARP.	Opportunity
LoAs issued	None to date.	Opportunity
Corresponding adjustments	None recorded. No BTR submissions record a first transfer.	Opportunity
CORSIA units	None currently available. No LoAs issued and no credits carry a CORSIA eligibility label.	Opportunity
Bilateral agreements	MoU with Singapore for Article 6.2 cooperation (January 2025). JCM agreement with Japan under negotiation as of early 2025.	In progress

Myanmar

Table A17: Myanmar's NDC Targets

	Target	Total abatement / Target emission level	Conditionality
Updated NDC 2021-2030	Specific mitigation targets for sectors or activities where reliable data exists	Total cumulative abatement of 244.5-414.8 MtCO2 by 2030 against sector-specific baselines	244.5 MtCO2 unconditional; additional 170.2 MtCO2 conditional on international support

Myanmar has not yet submitted its NDC setting targets to 2035.

Table A18: Myanmar's NDC Sectoral Breakdown

Sector	Unconditional abatement (MtCO2)	Additional conditional abatement (MtCO2)	Unconditional finance (US$ million)	Conditional finance (US$ million)
Energy (Electricity)	105.2	38.8	2,482.0	1,209.0
Agriculture (Agroforestry)	0.0	10.4	Not specified	224.4
LULUCF	123.6	133.0	500.0	Not specified
LPG Cookstove Substitution	14.9	0.0	Not specified	Not specified
Fuel Efficient Stoves	2.7	0.0	Not specified	Not specified
Off-Grid Mini-grids	0.7	0.2	90.0	200.0
Energy Efficiency	0.1	0.0	Not specified	Not specified

LULUCF = Land Use, Land-Use Change, and Forestry.

National climate policies

Myanmar's mitigation framework is anchored by the Myanmar Climate Change Strategy 2018–2030, the Myanmar Climate Change Master Plan 2018–2030, and the National Energy Efficiency and Conservation Policy. Forestry and land use is the dominant mitigation sector, with an unconditional target to reduce net Land Use, Land Use Change and Forestry (LULUCF) emissions by 25% against a 2005–2015 baseline by 2030 and a conditional target of 50%, anchored by commitments to preserve 30% of national land as reserved forest and 10% as protected areas. Energy policy centers on 2,000 MW of renewable capacity by 2030 and a 20% consumption reduction target under the National Energy Efficiency and Conservation Policy. Agriculture contributes a conditional target of 10.4 MtCO2 through agroforestry plantations across 275,000 hectares, integrated with the Agricultural Development Strategy's sustainable farming objectives.

CORSIA supply landscape

Myanmar has a total CORSIA-aligned volume of 5.9 MtCO2 to 2035. This can contribute to its NDC targets (total cumulative abatement of 244.5-414.8 MtCO2 by 2030, with a 2035 target yet to be submitted), or some may be authorized for use under CORSIA, and not accounted for by Myanmar towards its national targets.

No projects in Myanmar have issued CEEUs to date. Eight operational projects are CORSIA-aligned and have issued 0.06 MtCO2 that could become CEEUs with authorization and corresponding adjustment; these have the potential of further issuing 0.54 million units to 2035. Eleven early-stage CORSIA-aligned projects have not yet issued units but could generate 5.3 million units to 2035. From all these projects an additional 5.8 MtCO2 units could be supplied by 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Myanmar's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A9 maps CORSIA-aligned projects in Myanmar to their economic sectors.

Figure A9: Projects within Myanmar with eligible or aligned CORSIA supply

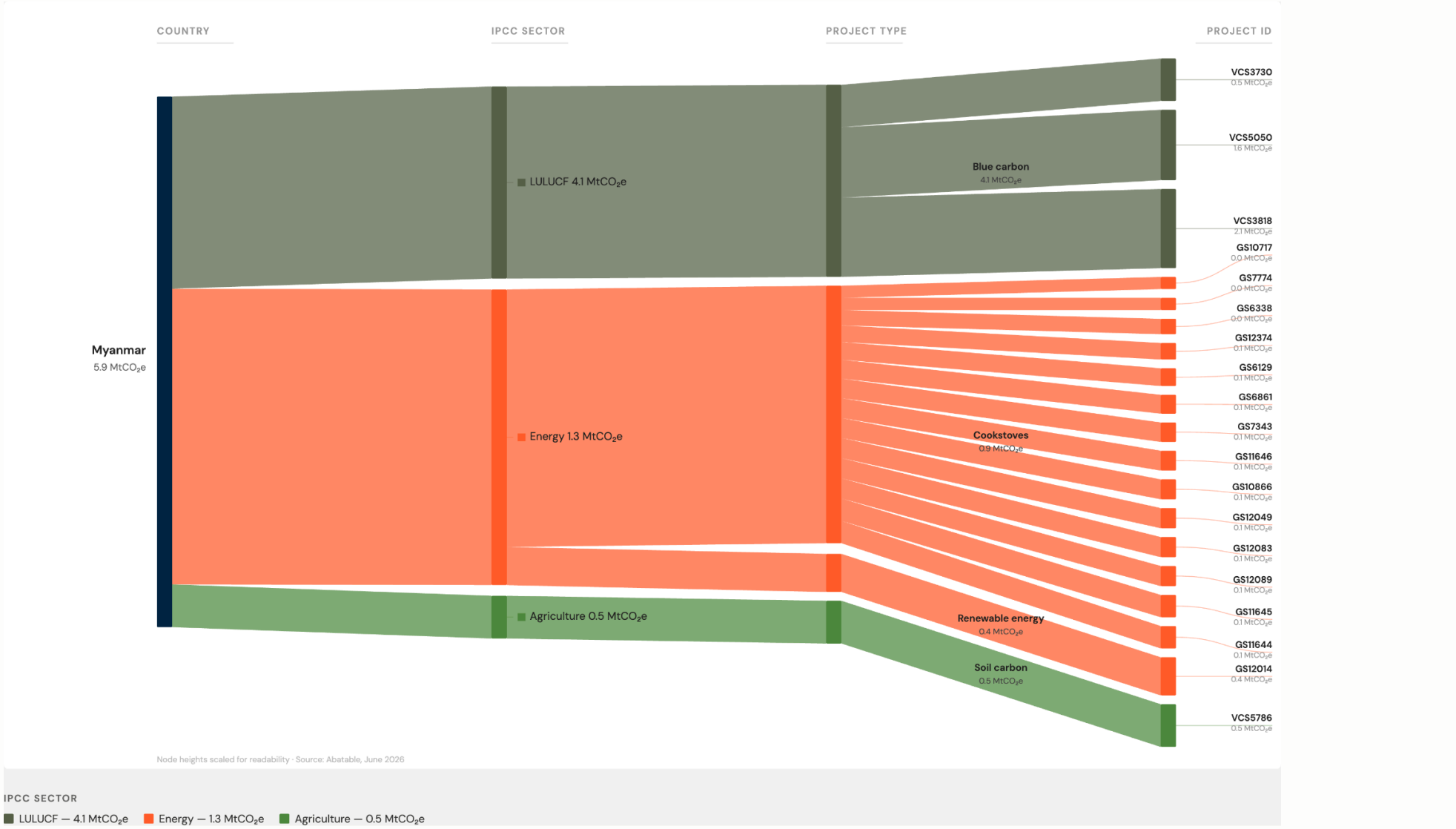


Table A19: Myanmar's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	None published. Myanmar relies on pre-existing climate policy instruments that do not establish an authorization framework.	Opportunity
Authorization process	No standardized procedure. Engagement is bilateral and project-by-project, principally through the Korea-Myanmar channel.	Opportunity
National registry	None. The 2021 NDC flagged a Climate Finance Registry as a future need but no implementation has been reported.	Opportunity
DNA appointed	Yes. Ministry of Natural Resources and Environmental Conservation (MONREC), Climate Change Division.	Favorable
Initial Report	Not submitted to UNFCCC CARP.	Opportunity
LoAs issued	One. The CCC Program of Activities for Distribution of Improved Cookstoves, authorized for transfer of A6.4ERs to the Republic of Korea, with a portion retained for Myanmar's NDC and potential CORSIA use.	In progress
Corresponding adjustments	None recorded. No BTR submissions record a first transfer.	Opportunity
CORSIA units	None currently available. The single authorized activity notes potential CORSIA use but CORSIA eligibility of the 60,000 A6.4ERs issued in February 2026 is subject to pending ICAO decisions on Article 6.4 unit eligibility.	Opportunity
Bilateral agreements	JCM agreement with Japan (active). Korea channel operates through the single Article 6.4 project authorization rather than a standalone Article 6.2 bilateral agreement.	In progress

Philippines

Table A20: Philippines' NDC targets

	Target	Total abatement / Target emission level	Conditionality
Enhanced NDC 2020-2030	75% reduction of GHG emissions below a cumulative BAU baseline of 3,340.3 MtCO2 for the period. Excludes LULUCF.	Total cumulative abatement of ~2,505.2 MtCO2 between 2020-2030	~90.5 MtCO2 (2.71%) unconditional; ~2,414.7 MtCO2 (72.29%) conditional on international support

The Philippines has not yet submitted its NDC 3.0 setting targets to 2035.

Table A21: Philippines' NDC Implementation Plan sectoral breakdown

Sector	Total abatement target (MtCO2)	Unconditional abatement (MtCO2)	Total financing requirement (US$ million)
Agriculture	211.0	0.0	1,027.0
Energy	587.0	3.4	36,455.0
IPPU	59.0	3.1	194.0
Transport	67.0	26.0	32,758.0
Waste	66.0	5.4	1,575.0

Figures reflect the initial phase of Policies and Measures identified as of 2023. This volume exceeds the unconditional target but only partially fulfills the conditional target. The NDC does not provide a sectoral breakdown of the full 75% target. LULUCF excluded from NDC Implementation Plan Sectoral breakdown. LULUCF = Land Use, Land-Use Change, and Forestry. IPPU = Industrial Processes and Product Use.

National climate policies

The Philippines' NDC and its Implementation Plan 2020–2030 are structured around adaptation as the primary objective, with mitigation framed largely as a co-benefit – reflecting the country's position as one of the world's most climate-vulnerable nations despite contributing only 0.40% of global emissions. Energy and agriculture drive mitigation ambitions: the NDC Implementation Plan targets 587 MtCO2 in energy reductions, supported by a 35% renewable energy target for 2030 and a 2022 policy allowing 100% foreign ownership of renewable projects, while agriculture provides 211 MtCO2 through livestock management and Alternate Wetting and Drying in rice cultivation. Forestry policy centers on the Philippine National REDD-plus Strategy, with an estimated mitigation potential of 38.5 MtCO2, though this remains anchored to a 2010–2020 implementation horizon. The heavy conditionality of the NDC means the government will need to make careful judgments about which reductions are credibly attributable to domestic policy ambition when considering authorization of units for international transfer.

CORSIA supply landscape

The Philippines has a total CORSIA-aligned volume of 219.3 MtCO2 to 2035. This can contribute to its NDC targets (total cumulative abatement of ~2,505.2 MtCO2 between 2020-2030, with a 2035 target yet to be submitted), or some may be authorized for use under CORSIA, and not accounted for by the Philippines towards its national targets.

No projects in the Philippines have issued CEEUs to date. One operational project is CORSIA-aligned and has issued 0.49 MtCO2 that could become CEEUs with authorization and corresponding adjustment. This project has the potential to issue an additional 4.3 million units to 2035. An additional five early-stage CORSIA-aligned projects have not yet issued units but could bring 215 million units by 2035. In total these projects could supply an additional 219.3 MtCO2 CEEUs. Any units authorized for CORSIA would be correspondingly adjusted and removed from the Philippines' national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A10 maps CORSIA-aligned projects in the Philippines to their economic sectors.

Figure A10: Projects within the Philippines with eligible or aligned CORSIA supply

Table A22: Philippines' Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	No comprehensive national framework enacted. The draft Low Carbon Economy Act (LCEA) and Carbon Rights Act were introduced in the House of Representatives in early 2025; both remain in draft.	Opportunity
Authorization process	Defined only for the energy sector under DC 2025-09-0018; DOE acts as the facilitating authority. No cross-sectoral authorization template, fee schedule, or timeline published.	Opportunity
National registry	Under development. Preliminary work initiated but the system is not yet operational.	In progress
DNA appointed	Yes. Department of Environment and Natural Resources (DENR).	Favorable
Initial Report	Not submitted to UNFCCC CARP.	Opportunity
LoAs issued	None recorded on the UNFCCC authorization portal.	Opportunity
Corresponding adjustments	None recorded. First Biennial Transparency Report does not record a first transfer.	Opportunity
CORSIA units	None currently available. No Philippine credits carry a CORSIA eligibility label.	Opportunity
Bilateral agreements	JCM agreement with Japan (active, signed January 2017); Implementation Agreement with Singapore under Article 6.2 (signed April 2026), building on an MoU signed in August 2024.	Favorable

Singapore

Table A23: Singapore's NDC Targets

	Target	Total abatement / Target emission level	Conditionality
Enhanced NDC 2021-2030	Reduce emissions to around 60 MtCO2 by 2030 after peaking earlier	Target emission level of ~60.0 MtCO2 by 2030	No unconditional/conditional split. Meeting targets conditional on the purchase of ITMOs and the importation of clean energy
NDC 3.0 2031-2035	Reduce emissions to between 45 and 50 MtCO2 by 2035	Target emission level of 45.0-50.0 MtCO2 by 2035	No unconditional/conditional split. Meeting targets conditional on the purchase of ITMOs and the importation of clean energy

National climate policies

Singapore does not set sectoral abatement volumes in its NDC but has set out a detailed approach to emission reductions within its National Climate Change Strategy that outlines how Singapore intends to address climate change through a whole-of-nation approach. The following summarises Singapore's domestic policy approach to meeting its emissions targets.

Singapore's mitigation strategy is almost entirely built around energy efficiency, carbon pricing, low-carbon imports, and long-term technology bets – reflecting its position as a city-state with no meaningful land area for forestry or agriculture, minimal renewable energy potential beyond solar, and an economy built on energy-intensive petrochemicals, aviation, and maritime trade. The carbon tax is the central instrument, legislated to rise to SGD 45 per ton in 2026–2027 and SGD 50–80 by 2030, applied without exemption to all facilities emitting 25 kilotons or more annually – the most robust carbon price in Southeast Asia. The National Energy Transition Roadmap targets 70% renewable electricity capacity by 2050, with an import pathway of 6 GW of low-carbon electricity from the region by 2035 and domestic solar scaled to 2 GWp. Buildings, which account for over a third of emissions, are subject to the Singapore Green Building Masterplan targeting 80% green-certified by gross floor area by 2030. Singapore's structural reliance on ITMOs to bridge its residual emissions gap makes it a significant demand-side participant in regional carbon markets rather than a supply source.

CORSIA supply landscape

Singapore has a total CORSIA-aligned volume of 0.6 MtCO2 to 2035. This can contribute to its NDC targets (reduce emissions to around 60 MtCO2 by 2030 and 30-45 MtCO2 by 2035), or some may be authorized for use under CORSIA, and not accounted for by Singapore towards its national targets.

No projects in Singapore have issued CEEUs to date. Two operational projects are CORSIA-aligned and have issued 0.08 MtCO2 that could become CEEUs with authorization and corresponding adjustment, with a potential to issue an additional 0.48 MtCO2 to vintage 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Singapore's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A11 maps CORSIA-aligned projects in Singapore to their economic sectors.

Figure A11: Projects within Singapore with eligible or aligned CORSIA supply

Table A24: Singapore's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	Yes. International Carbon Credit (ICC) Framework introduced under the Carbon Pricing (Amendment) Act 2022, operationalized through bilateral Implementation Agreements (IAs) under Article 6.2. Singapore is a buyer country; the framework governs inbound ITMO procurement rather than export supply.	Favorable
Authorization process	Defined. Four-stage process: Note of Intent; design assessment; joint authorization via Joint Statement and host-country LoA; ITMO issuance post-verification. NEA reviews and accepts Eligible International Carbon Credits for surrender by carbon tax-liable facilities.	Favorable
National registry	Under development. NEA is developing a national registry to track ICCs surrendered by tax-liable facilities.	In progress
DNA appointed	Not communicated to UNFCCC, however the National Climate Change Secretariat, the Ministry of Trade and Industry, the Ministry of Sustainability and the Environment, and the National Environment Agency all lead work on Article 6 in Singapore.	Favorable
Initial Report	Not yet submitted to UNFCCC CARP. No first transfer recorded under any IA as of April 2026.	Opportunity
LoAs issued	Singapore co-authorizes projects via Joint Committees under each IA rather than issuing LoAs in the host country sense. Singapore-Ghana IA is the most advanced, with more than ten projects at Stage A or B by mid-2025.	In progress
Corresponding adjustments	None recorded inbound. First inbound transfers and associated corresponding adjustments expected from 2026 onwards.	In progress
CORSIA units	Nothing issued. Singapore operates as a buyer rather than a supplier of carbon credits and does not host domestic carbon projects.	Opportunity
Bilateral agreements	Implementation Agreements with over ten countries and additional MoUs with further countries	Favorable

Thailand

Table A25: Thailand's NDC Targets

	Target	Total abatement / Target emission level	Conditionality
Enhanced NDC 2021-2030	30% to 40% reduction below BAU by 2030	Total abatement of 166.5-222.0 MtCO2 by 2030 against a projected BAU baseline	30% reduction unconditional via domestic efforts; increase to 40% conditional on technology transfer, finance, and capacity-building support
NDC 3.0 2031-2035	Net emissions limited to 152 MtCO2 by 2035 (47% reduction from 2019 levels)	Target emission level of 152.0 MtCO2 by 2035 (total abatement of 135.2 MtCO2 against 2019 levels)	Target heavily reliant on international climate finance; no explicit unconditional/conditional split

Table A26: Thailand's NDC sectoral targets

Sector	NDC 2021-2030 unconditional reduction (MtCO2)	NDC 2021-2030 additional conditional reduction (MtCO2)	NDC 2031-2035 net emissions target (MtCO2)	NDC 2031-2035 total emissions reduction (MtCO2)	NDC 2031-2035 est. mitigation financing (US$ million)
Energy	124.6	32.0	117.1	68.1	6,110.0 for energy and transport
Transport	45.6	2.5	54.2	22.6	
IPPU	1.4	0.1	33.8	4.2	940.0 for IPPU, Agriculture and Waste
Agriculture	4.1	1.0	52.9	7.6	
Waste	9.1	1.9	12.0	6.7	
LULUCF	Excluded	Excluded	-118.0	26.0 (additional sink)	Not specified

NDC 2021-2030 does not include sectoral financing. NDC 2031-2035 energy and transport share US$6,110 million; IPPU, agriculture and waste share US$940 million. LULUCF excluded from 2030 target scope. LULUCF = Land Use, Land-Use Change, and Forestry. IPPU = Industrial Processes and Product Use.

National climate policies

Thailand's policy architecture is notable for its quantitative precision at the measure level. The NDC Action Plan on Mitigation 2021–2030 disaggregates commitments to individual measures, with the largest single measure being biomass energy expansion (64.9 MtCO2), followed by transport electrification under the 30×30 policy (28.3 MtCO2), industrial energy efficiency (11.2 MtCO2), and appliance standards (10.4 MtCO2). The International Carbon Credit Guideline, approved by Cabinet in August 2025, establishes the formal authorization process for credits under both the domestic Premium T-VER program and independent international standards, covering renewable energy, energy efficiency, transport electrification, waste, forestry, SAF, CCS, and direct air capture. The Long-Term Low Greenhouse Gas Emission Development Strategy targets at least 50% renewables from new power plants by 2050 and battery electric and plug-in hybrid vehicles reaching 69% of new vehicle sales by 2035. The breadth and specificity of these instruments mean the sectoral policy space in energy, transport, and agriculture is becoming progressively more saturated, which is the relevant frame for assessing the additionality of carbon projects.

CORSIA supply landscape

Thailand has a total CORSIA-aligned volume of 12.9 MtCO2 to 2035. This can contribute to its NDC targets (total abatement of 166.5-222.0 MtCO2 by 2030 and net national emissions limited to 152 MtCO2 by 2035), or some may be authorized for use under CORSIA, and not accounted for by Thailand towards its national targets.

No projects in Thailand have issued CEEUs to date. Eleven operational projects are CORSIA-aligned and have issued 1.6 MtCO2 that could become CEEUs with authorization and corresponding adjustment. Six early-stage CORSIA-aligned projects have not yet issued units. In total, projects could supply a further 9.7 MtCO2 CEEUs by 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Thailand's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A12 maps CORSIA-aligned projects in Thailand to their economic sectors.

Figure A12: Projects within Thailand with eligible or aligned CORSIA supply

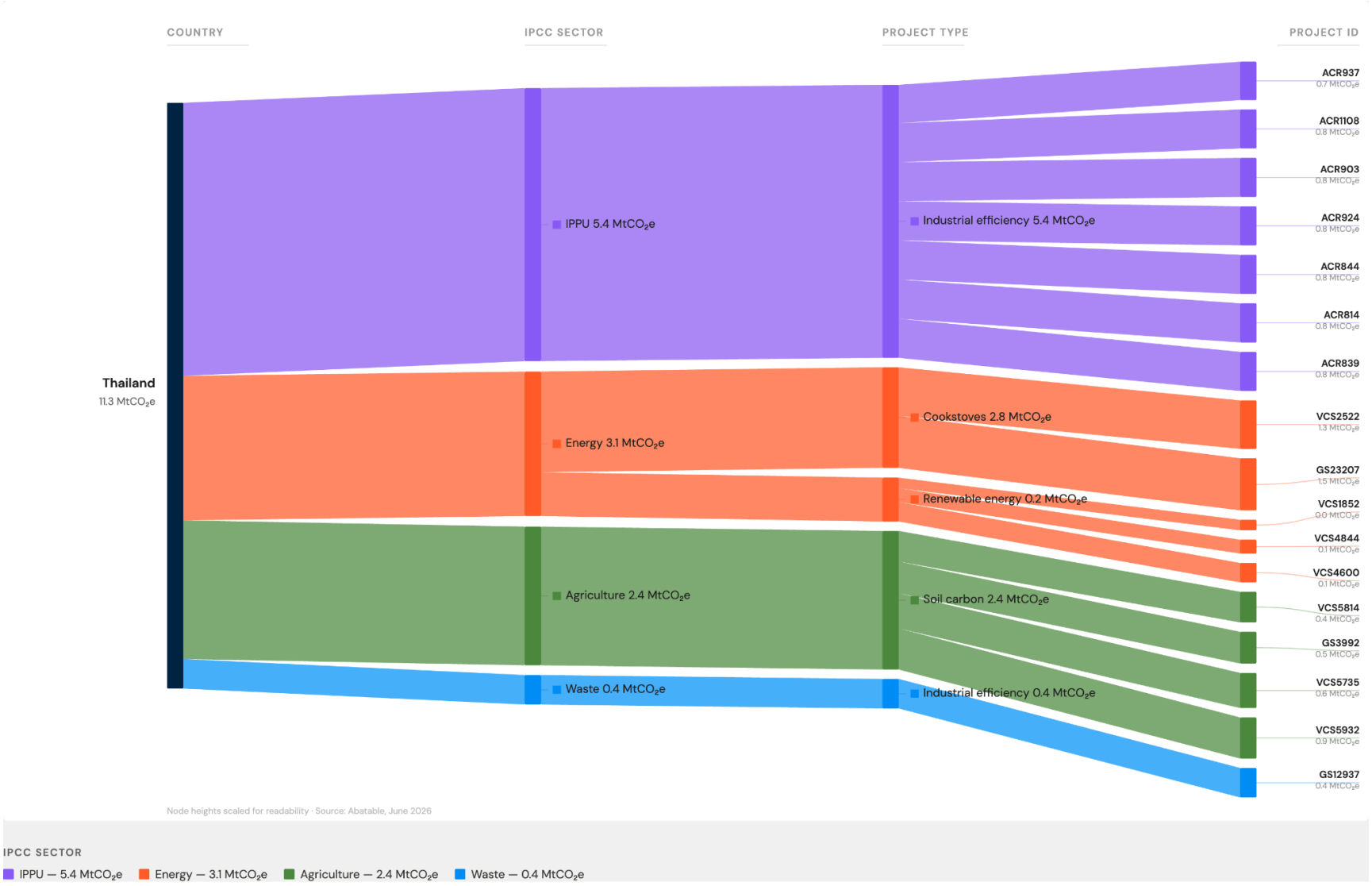


Table A27: Thailand's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	Yes. International Carbon Credit Guideline approved by Cabinet in August 2025, establishing the formal authorization process for credits under both the domestic Premium T-VER program and independent international standards.	Favorable
Authorization process	Defined. Project proponents apply to the Department of Climate Change and Environment (DCCE), which reviews against the NDC Action Plan and additionality requirements. The DCCE Director-General issues a Letter of Authorization. Authorized credits are tracked in the Thailand Carbon Credit Registry administered by TGO.	Favorable
National registry	Operational. The Thailand Carbon Credit Registry, administered by TGO, records issuance, transfer, acquisition, cancellation, and use of all carbon credits. International transfers are recorded in the registry.	Favorable
DNA appointed	Yes. Department of Climate Change and Environment (DCCE) under the Ministry of Natural Resources and Environment.	Favorable
Initial Report	Submitted to UNFCCC CARP, covering the Thailand-Switzerland cooperative approach and the Thailand-Japan JCM agreement. Updated initial report subsequently submitted.	Favorable
LoAs issued	At least two confirmed: the Bangkok E-Bus Program (Switzerland cooperative approach) and a floating solar project under the Japan JCM.	Favorable
Corresponding adjustments	Thailand completed the first-ever internationally transferred and correspondingly adjusted ITMO transfer under Article 6.2 with Switzerland in 2024 (Bangkok E-Bus Program, 1,916 tCO2e).	Favorable
CORSIA units	Developing. Premium T-VER is an ICAO-approved program for the CORSIA First Phase (2024–2026). DCCE has confirmed LoAs are required for CORSIA use. No public confirmation of LoAs issued specifically for CORSIA.	In progress
Bilateral agreements	Article 6.2 agreements with Switzerland (operational, first transfer completed), Japan (JCM, first transfer completed November 2025), Singapore (implementation agreement signed August 2025, operationalized February 2026), and New Zealand (cooperation sought).	Favorable

Timor-Leste

Table A28: Timor-Leste's NDC Targets

	Target	Total abatement / Target emission level	Conditionality
Updated NDC 2022-2030	Economy-wide transition to a 'nature-positive' resilient development pathway	No quantified numerical target; country explicitly refrains from setting a numerical GHG target until a robust GHG inventory is established	Mix of unconditional governance/policy actions and conditional physical interventions conditional on international climate finance

Timor-Leste has not yet submitted its NDC setting targets to 2035.

Rather than a sectoral abatement table, Timor-Leste's NDC sets out commitments across four core pillars: Climate Risk Governance; Nature-Positive Growth and Transition; Low Carbon Development; and Climate Change Adaptation and Resilience Building. No quantified abatement volumes or financial breakdowns are provided by sector.

National climate policies

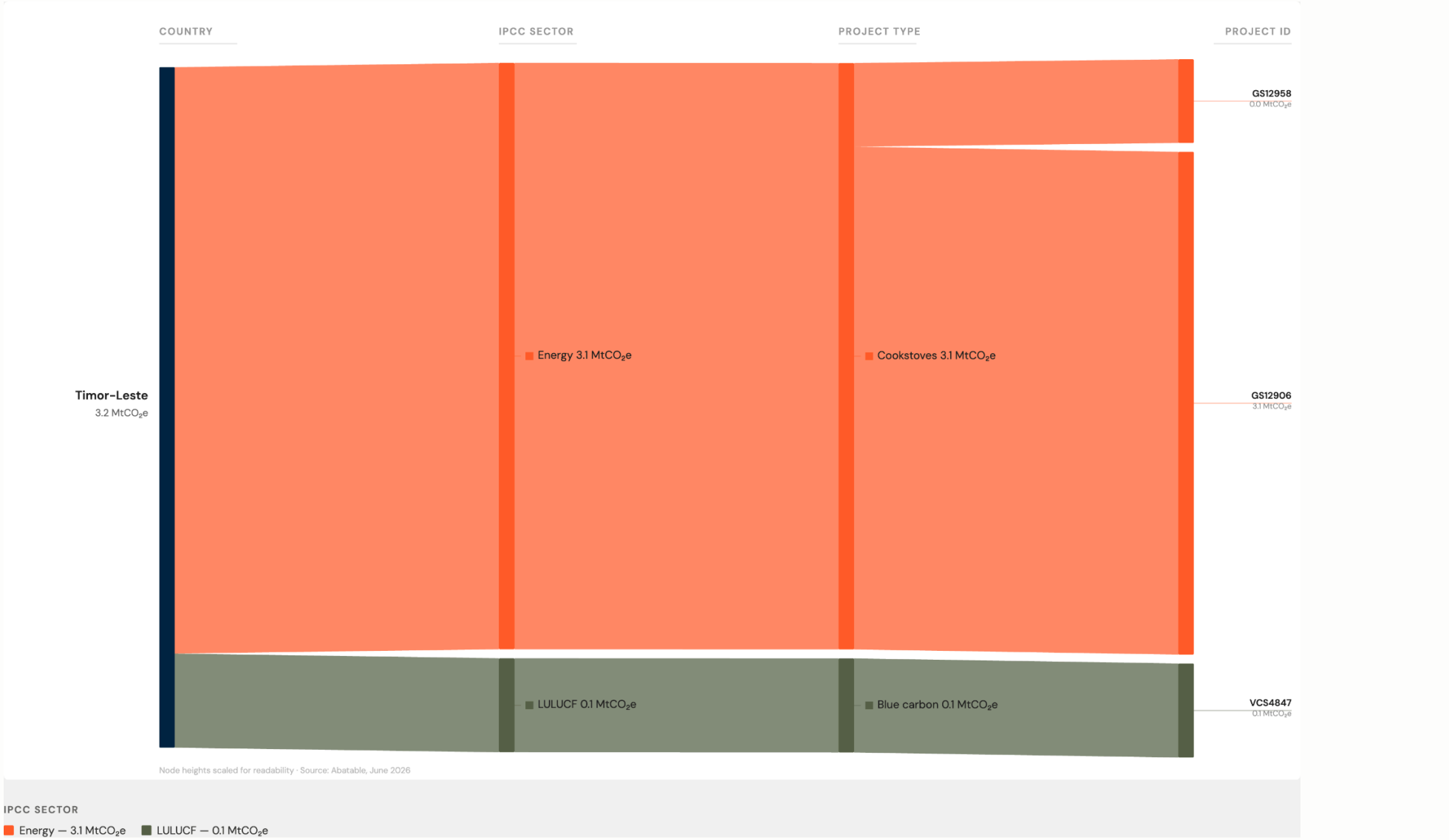
Timor-Leste's climate framework is almost entirely adaptation-oriented, with mitigation ambition modest and largely tied to rural development objectives. The forestry and land use sector holds the greatest mitigation potential: the government has pledged unconditionally to protect 10% of land and marine areas and conditionally to plant one million trees annually, supported by a EUR 16.9 million EU reforestation program that has already planted two million trees. Energy mitigation instruments target a 10% efficiency improvement for residential appliances and biomass cookstoves, a 3% annual phase-out of kerosene, and the elimination of firewood cooking in Dili by 2030. The country has explicitly committed to accelerating land tenure reform over 2021–2025 as an enabling condition for nature-based solutions and carbon market participation, acknowledging that unresolved land rights remain a practical constraint on project development. EUR 2.2 million in EU technical assistance is funding the development of GHG reporting and carbon reward systems to establish the infrastructure needed for carbon crediting.

CORSIA supply landscape

Timor-Leste has a total CORSIA-aligned volume of 3.2 MtCO2 to 2035. This can contribute to its NDC targets, although recognizing Timor-Leste has not yet quantified a numerical target for its NDC and has not yet submitted its 2035 NDC target, or some may be authorized for use under CORSIA, and not accounted for by Timor-Leste towards its national targets.

No projects in Timor-Leste have issued CEEUs to date, and there is no current CORSIA-aligned supply. Three early-stage projects are CORSIA-aligned but have not yet issued units; if verified and issued, they have the potential to contribute 3.2 MtCO2 CEEUs by 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Timor-Leste's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A13 maps CORSIA-aligned projects in Timor-Leste to their economic sectors.

Figure A13: Projects within Timor-Leste with eligible or aligned CORSIA supply



LULUCF = Land Use, Land-Use Change, and Forestry.

Table A29: Timor-Leste's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	None published. A Climate Change Law (third draft circulated January 2024) includes provisions for carbon markets and MRV but has not been enacted. Timelines remain uncertain.	Opportunity
Authorization process	None established. No decree, operational guidance, or approval workflow exists for Article 6 project approvals.	Opportunity
National registry	None identified.	Opportunity
DNA appointed	Yes. Ministry of Tourism and Environment.	Favorable
Initial Report	Not submitted to UNFCCC CARP.	Opportunity
LoAs issued	None.	Opportunity
Corresponding adjustments	None recorded. No BTR submissions record a first transfer.	Opportunity
CORSIA units	None. No LoAs have been issued and no credits carry a CORSIA eligibility label.	Opportunity
Bilateral agreements	None identified.	Opportunity

Viet Nam

Table A30: Viet Nam's NDC Targets

	Target	Total abatement / Target emission level	Conditionality
Updated NDC 2021-2030	Reduce GHG emissions by 15.8% to 43.5% by 2030 compared to BAU	146.3-403.7 MtCO2 reduction by 2030 against projected BAU baseline	15.8% (146.3 MtCO2) unconditional; additional 27.7% (257.4 MtCO2) conditional on international support

Viet Nam has not yet submitted its NDC setting targets to 2035.

Table A31: Viet Nam's NDC Sectoral Breakdown

Sector	Unconditional abatement (MtCO2)	Conditional total abatement (MtCO2)	Unconditional mitigation finance (US$ million)	Conditional total mitigation finance (US$ million)
Energy	64.8	227.0	14,464.4	60,561.4
Agriculture	12.4	50.9	2,122.8	16,102.2
LULUCF	32.5	46.6	3,927.4	5,494.9
Waste	8.7	29.4	916.6	2,726.1
IPPU	27.9	49.8	310.0	1,950.1

Realizing the full conditional pathway requires ~US$86.83 billion in international support against a domestic investment of ~US$21.74 billion for the unconditional baseline. LULUCF = Land Use, Land-Use Change, and Forestry. IPPU = Industrial Processes and Product Use.

National climate policies

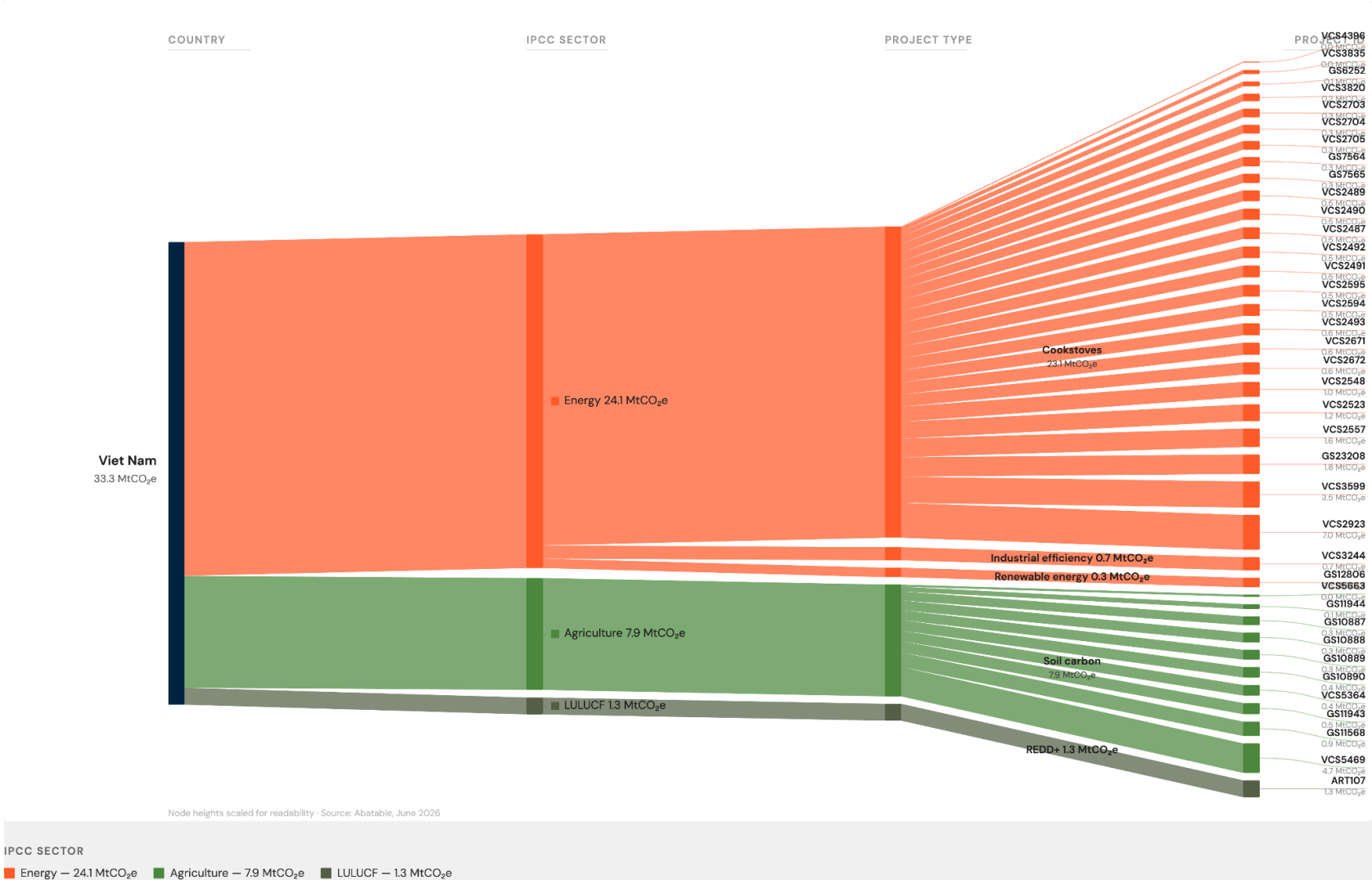
Viet Nam's policy landscape is defined by ambitious scale and a pronounced dependence on international finance, with roughly three-quarters of headline mitigation ambition contingent on external resources. Power Sector Development Plan 8 (PDP8) targets 73 GW of solar and 38 GW of wind by 2030, with the unconditional energy commitment targeting a 7% reduction (64.8 MtCO2) at $14.46 billion and the conditional scenario an additional 24.4% (227 MtCO2) requiring $60.56 billion. The National Energy Efficiency Program (VNEEP3) targets an 8–10% commercial consumption reduction, and transport goals include 100% green urban buses and taxis by 2030. Agriculture targets a 5.5% conditional reduction (50.9 MtCO2), primarily through Alternate Wetting and Drying irrigation and organic agriculture. The government targets forest cover to increase to 42% of national land area by 2030, with mangrove restoration of 50,000 hectares. A domestic Emissions Trading System has been piloting since 2025 and is targeted to be fully operational by 2028. Decree 112/2026/ND-CP (April 2026) establishes the legal architecture for Article 6 transfers, though no LoAs have been issued to date.

CORSIA supply landscape

Viet Nam has a total CORSIA-aligned volume of 33.3 MtCO2 to 2035. This can contribute to its NDC targets (146.3-403.7 MtCO2 reduction by 2030, with a 2035 target yet to be set), or some may be authorized for use under CORSIA, and not accounted for by Viet Nam towards its national targets.

No projects in Viet Nam have issued CEEUs to date. Twenty-three operational projects are CORSIA-aligned and have issued 10.5 MtCO2 that could become CEEUs with authorization and corresponding adjustment. These could issue additional 9.5 million units by 2035. Fourteen early-stage CORSIA-aligned projects have not yet issued units, but could issue 13.3 million units. In total, CORSIA-aligned projects could supply a further 22.8 MtCO2 CEEUs by 2035. Any units authorized for CORSIA would be correspondingly adjusted and removed from Viet Nam's national accounting, so further authorizations must be considered in the context of achieving its NDC targets. Figure A14 maps CORSIA-aligned projects in Viet Nam to their economic sectors.

Figure A14: Projects within Viet Nam with eligible or aligned CORSIA supply



LULUCF = Land Use, Land-Use Change, and Forestry.

Table A32: Viet Nam's Article 6 and CORSIA engagement

Feature	Details	Readiness
Article 6 framework	Yes. Decree 112/2026/ND-CP (April 2026) establishes legal architecture for Article 6.2 and 6.4 transfers, sets transfer ratio caps by activity category, and formalizes corresponding adjustment procedures.	Favorable
Authorization process	Four-stage process: LoA issued post-issuance for transfers requiring a corresponding adjustment (25-working-day window); notification-only pathway for transfers without; Article 6.4 registration via National Public Service Portal (45-day timeline).	Favorable
National registry	Operational. National Registration System administered by MAE records all GHG quotas and credits with unique non-replicable codes. International transfers must be recorded and published.	Favorable
DNA appointed	Yes. Ministry of Agriculture and Environment (MAE), following the 2025 merger of MONRE with the Ministry of Agriculture and Rural Development.	Favorable
Initial Report	Not yet submitted to UNFCCC CARP.	Opportunity
LoAs issued	None to date.	Opportunity
Corresponding adjustments	None recorded. Decree 112/2026 formalizes the procedure, but no transfers have been applied in practice.	In progress
CORSIA units	None currently available. No LoAs issued to date.	Opportunity
Bilateral agreements	JCM agreement with Japan (2013, active); implementation agreement with Singapore (September 2025); Article 6.2 agreement with the Republic of Korea.	Favorable

Table A33: ASEAN country emission levels and targets

Country	Total emissions level	Updated NDC target (2030)	NDC 3.0 target (2035)
Brunei Darussalam	13.6 MtCO2e (exc LULUCF) 9.1 MtCO2e (inc LULUCF) (2022)	Reduce GHG emissions by 20% relative to the 2030 BAU (29.5 MtCO2).	Reduce GHG emissions by 20% relative to the 2035 BAU (30.8 MtCO2). This is a conditional target upon international support.
Cambodia	63.3 MtCO2 (exc LULUCF) (2022)	Reduce emissions by 41.7% (64.6 MtCO2) compared to the 2030 BAU (155.0 MtCO2).	Unconditional: 16% reduction (21.7 MtCO2) compared to the 2035 BAU (133.7 MtCO2). Conditional: 55% reduction (73.7 MtCO2) compared to the 2035 BAU (133.7 MtCO2).
Indonesia	1,070.5 MtCO2 (exc LULUCF) 1,382.9 MtCO2 (inc LULUCF) (2022)	Unconditional: 31.89% reduction against the 2030 BAU (2,869 MtCO2). Conditional: 43.20% reduction against the 2030 BAU (2,869 MtCO2).	Absolute emissions decline to between 1,257 MtCO2 and 1,488 MtCO2 by 2035 depending on economic growth scenarios (measured against a 2035 BAU of 1,787 MtCO2).
Lao PDR	38.8 MtCO2 (exc LULUCF) -21.5 MtCO2 (inc LULUCF) (2022)	Unconditional: 60% GHG emission reduction compared to the 2030 BAU (104 MtCO2), aiming for a post-2030 net zero trajectory.	Not submitted
Malaysia	327.7 MtCO2 (exc LULUCF) 115.4 MtCO2 (inc LULUCF) (2021)	Unconditional: Reduction of economy-wide carbon intensity against GDP by 45% compared to 2005 levels.	Unconditional: Absolute reduction of 20 MtCO2 by 2035 from the projected peak level. Conditional: Absolute reduction of an additional 10 MtCO2 (total 30 MtCO2) by 2035 from the projected peak level.
Myanmar	0.61 tCO2 per capita (2018)	Unconditional: Cumulative reduction of 244.52 MtCO2 by 2030 against the 2030 sectoral BAUs (297.01 MtCO2 for Energy; 504.56 MtCO2 for FOLU). Conditional: Cumulative reduction of 414.6	Not submitted

Country	Total emissions level	Updated NDC target (2030)	NDC 3.0 target (2035)
		MtCO2 by 2030 against the 2030 sectoral BAUs.	
Philippines	230.2 MtCO2 (exc LULUCF) 204.3 MtCO2 (inc LULUCF) (2020)	Unconditional: 2.71% cumulative GHG emission reduction and avoidance against the 2020-2030 cumulative economy-wide BAU (3,340.3 MtCO2). Conditional: 72.29% cumulative reduction and avoidance (Total 75%) against the 2020-2030 cumulative economy-wide BAU (3,340.3 MtCO2).	Not submitted
Singapore	58.6 MtCO2e (exc LULUCF) 58.6 MtCO2e (inc LULUCF) (2022)	Absolute target to reduce emissions to ~60 MtCO2 in 2030.	Absolute target to reduce emissions to between 45 and 50 MtCO2 in 2035.
Thailand	385.9 MtCO2 (exc LULUCF) 278.0 MtCO2 (inc LULUCF) (2022)	Unconditional: Reduce emissions by 30% from the 2030 BAU (approx. 555 MtCO2) by 2030. Conditional: Reduce emissions by up to 40% from the 2030 BAU (approx. 555 MtCO2) by 2030.	Reduce net GHG emissions to 152 MtCO2 by 2035 (an absolute 47% reduction from 2019 levels; does not utilize a BAU reference).
Timor-Leste	1.5 MtCO2 (exc LULUCF) 1.8 MtCO2 (inc LULUCF) (2010)	No quantified numerical target.	Not submitted
Viet Nam	321.5 MtCO2 (exc LULUCF) 284.0 MtCO2 (inc LULUCF) (2014)	Unconditional: 15.8% reduction (146.3 MtCO2) from the 2030 BAU (927.9 MtCO2). Conditional: 43.5% reduction (403.7 MtCO2) from the 2030 BAU (927.9 MtCO2).	Not submitted

Total emissions level drawn from Biennial Transparency Reports, or where not submitted, data available from NDC submissions. LULUCF = Land Use, Land-Use Change, and Forestry.

Technical Annex source list

1. UNFCCC, Nationally Determined Contributions Registry, 2026.
2. UNFCCC, Long-Term Low Emission Development Strategies Portal, 2026.
3. UNFCCC, Centralized Accounting and Reporting Platform (CARP), 2026.
4. UNFCCC, Article 6.2 Authorizations Portal, 2026.
5. UNFCCC, Article 6.2 Initial Reports, 2026.
6. UNFCCC, Article 6.2 Cooperative Approaches, 2026.
7. UNFCCC, First Biennial Transparency Reports, 2026.
8. Climate Change Commission, Philippines, NDC Implementation Plan 2020–2030, 2023.
9. Department of Climate Change and Environment, Thailand, NDC Action Plan on Mitigation 2021–2030, 2024.
10. Indonesia, Presidential Regulation No. 110/2025 on Carbon Economic Value Instruments and National Greenhouse Gas Emission Control, 2025.
11. Ministry of Natural Resources and Environmental Sustainability, Malaysia, National Carbon Market Policy, 2026.
12. Department of Climate Change and Environment, Thailand, International Carbon Credit Guideline, 2025.
13. Ministry of Agriculture and Environment, Viet Nam, Decree 112/2026/ND-CP on International Transfer of Greenhouse Gas Emission Mitigation Outcomes and Carbon Credits, 2026.
14. Attorney-General's Chambers, Singapore, Carbon Pricing (Amendment) Act 2022, 2023.
15. Singapore Government, Singapore Green Plan 2030, 2021.
16. Ministry of Environment, Cambodia, Operations Manual for the Implementation of Article 6 of the Paris Agreement in Cambodia, 2024.
17. Government of Lao PDR, Decree on Carbon Credits, 2025.
18. Department of Energy, Philippines, Department Circular No. DC2025-09-0018: General Guidelines for the Generation, Management and Monitoring of Carbon Credits in the Energy Sector, 2025.
19. Ministry of Environment, Japan, Joint Crediting Mechanism Portal, 2026.
20. Singapore Government, Carbon Markets Cooperation — Implementation Agreements, 2026.
21. KliK Foundation, Switzerland, Partner Countries with Bilateral Climate Agreements, 2026.

Disclaimer: All data is as of 01 June 2026. In the figures above, projects are mapped to sectors based on the project's activity and 2006 IPCC Guidelines for National Greenhouse Gas Inventories. However, countries may map these differently based on their own approaches to unit accounting within their national inventories.