SIEW Thinktank Roundtable (27 October 2023)

Financing ASEAN Decarbonisation Roadmap Towards Carbon Neutrality

A joint presentation by the Energy Studies Institute and the ASEAN Centre for Energy

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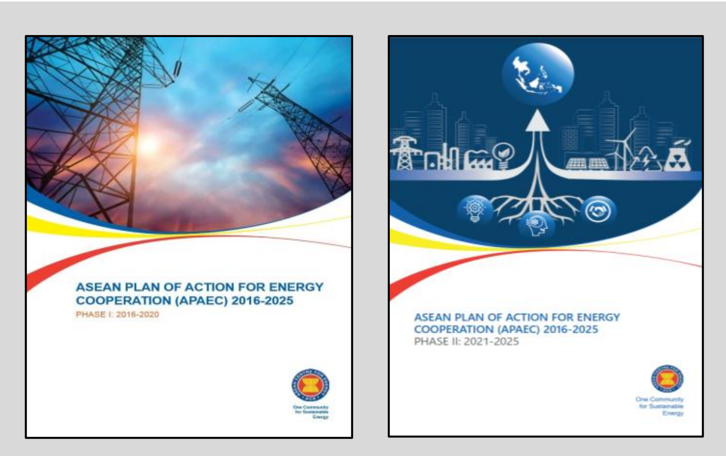
ASEAN Centre for Energy
One Community for Sustainable Energy

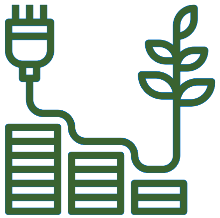
Kim Jeong Won
Senior Research Fellow, Energy Studies Institute

ASEAN Plan of Action for Energy Cooperation (APAEC)

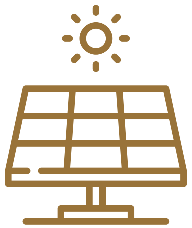


APAEC is **a series of guiding policy documents** to support the implementation of **ASEAN multilateral energy cooperation** to advance regional integration and connectivity goals.

Serves as a blueprint for better energy cooperation under seven (7) programme areas in achieving the goals of the **ASEAN Economic Community (AEC)** pillar of the ASEAN Community.



To **reduce energy intensity** by 32% by 2025 and encourage EE&C efforts, especially in transport and industry



To **increase the share of RE** to 23% in TPES and 35% in installed power capacity by 2025

- ASEAN Power Grid
- Trans-ASEAN Gas Pipeline
- Coal and Clean Coal Technology
- **Energy Efficiency and Conservation**
- **Renewable Energy**
- Regional Energy Policy and Planning
- Civilian Nuclear Energy

Attracting Clean Energy Investment in ASEAN

- To address the importance of attracting energy investments and sustainable financing for ASEAN
- To identify key priority areas in building up regional capabilities on energy investments and financing
- To provide insightful guidelines for ASEAN regulators and policymakers to design and make better decisions regarding investment policy in the energy sector

ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025 Phase II: 2021-2025

- **Aspirational RE Targets by 2025**
  - 23% RE share in Total Primary Energy Supply (TPES)
  - 35% RE share in installed power capacity
- **Energy Investment**
  - Programme Area No. 1: ASEAN Power Grid (APG), Action Plan 1.3: **Promote cross-border technical skills and knowledge transfer as well as promote financial investment for APG projects**
  - Programme Area No. 6: Regional Energy Policy and Planning (REPP), Action Plan 5.1: **Develop a Roadmap for 2021-2025 to enhance capabilities in enabling regulatory environments to attract investment in energy infrastructure and technologies**

ASEAN Strategy for Carbon Neutrality

Strategies

- Accelerate green value chain integration
- Regional circular economy supply chains
- Connect green infrastructure & market
- Interoperable carbon markets
- Credible & common standards
- Attracting & deploying green capital
- Green talent development & mobility
- Green best practice sharing

Outcomes

Boost green industries	Enable ASEAN interoperability	Establish global credibility	Build green capabilities
Capturing full value of regional green industries	Accelerating exchanges of green products & feedstocks	Attracting international capital & increasing liquidity	Developing talent & expertise to drive the transition

Initiatives

Boost green industries	Enable ASEAN interoperability	Establish global credibility	Build green capabilities
Identify & boost opportunities for greenification of the manufacturing value chains regionally	Upgrade ATIGA to comprehensively include circular products	Harmonize measurement, reporting & verification standards and policies to access global liquidity and regional carbon sink potential	Promote de-risking through adoption of innovative sustainable finance instruments
Enable ASEAN feedstocks pathways for biofuels to capture global markets	Enable regional power trading, physical interconnection, and policy cooperation	Establish globally credible regional GHG inventory to flow from national reports	Incentivize green fund managers to locate in ASEAN, and local funds to develop
Coordinate development of regional policies and regulations to support CCS/CCUS infrastructure	Enable interoperability of regional transport & logistics infrastructure	Standardize globally credible frameworks for corporate climate reporting	Establish green skills taxonomy & facilitate movement of natural persons
	Promote regional energy efficiency (EE) & conservation	Encourage adherence to ASEAN Taxonomy on Sustainable Finance	Facilitate best practice sharing to support effective just transition at national level
			Conduct capability building for sustainable infrastructure & smart cities

Source: ASEAN Secretariat (2023)

Investment Needed to Meet the Targets

IRENA & ACE (2016)

- To reach the 23% target, ASEAN would need to attract investment of **US$27 billion** in renewable energy generation and infrastructure **every year between 2014 and 2025**.

ACE (2022)

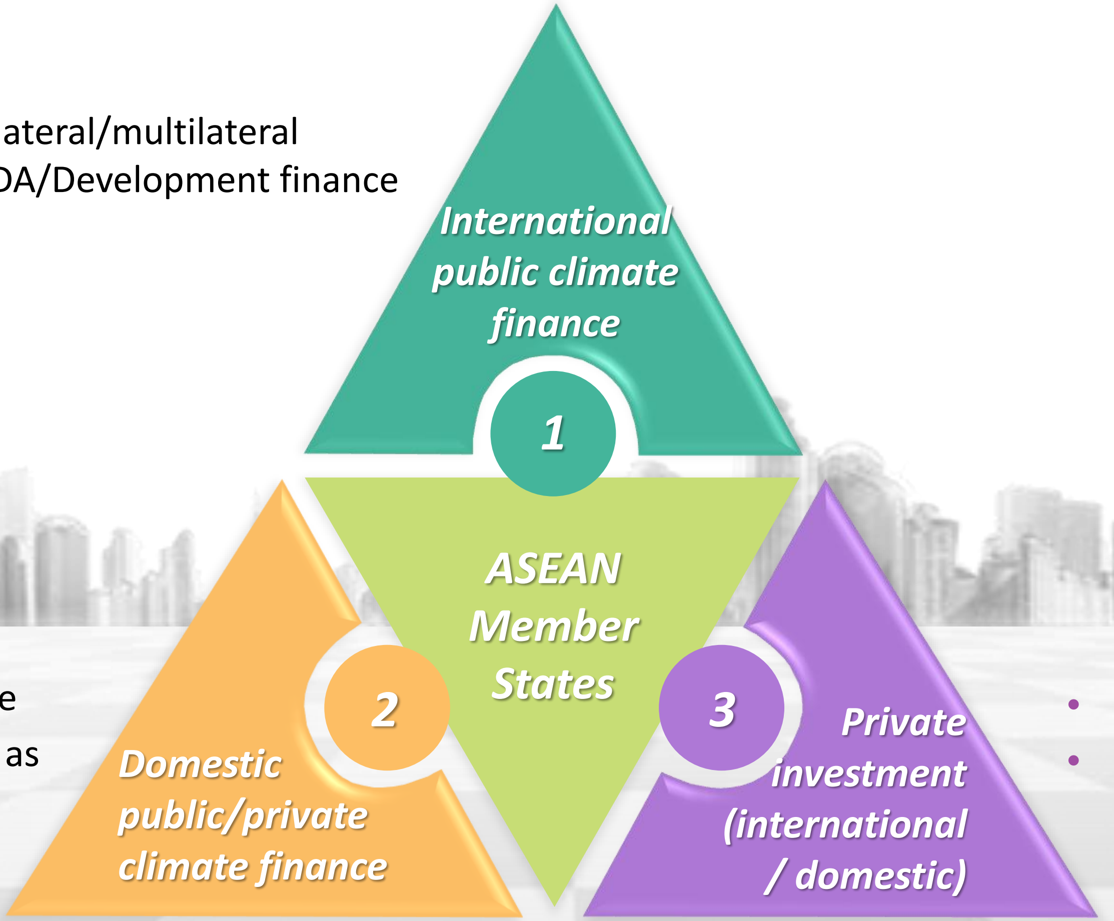
- Approximately **US$160 billion** will be required for RE for **2021-2030 period**.
- In the long run **(2031-2050)**, an **additional investment of US$400 billion** is required.

IEA (2022)

- Energy investment in Southeast Asia reaches an **annual average of US$130 billion by 2030** in the STEPS and it reaches **US$190 billion** in the SDS.

Financing Decarbonisation Projects in AMS

- Bilateral/multilateral ODA/Development finance

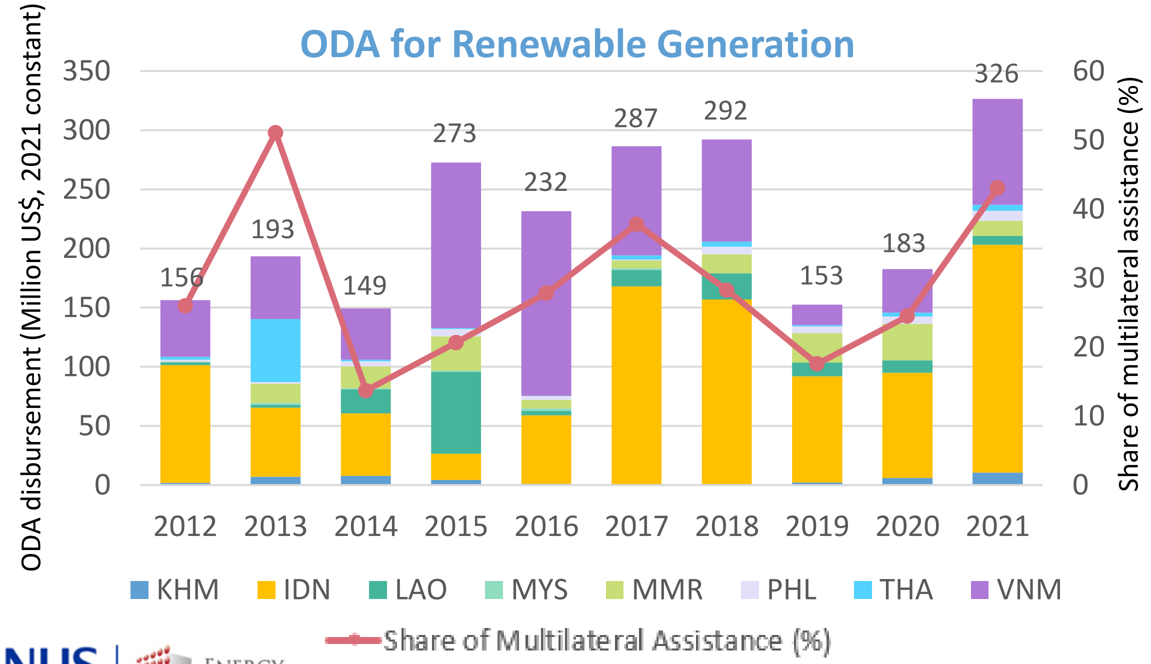


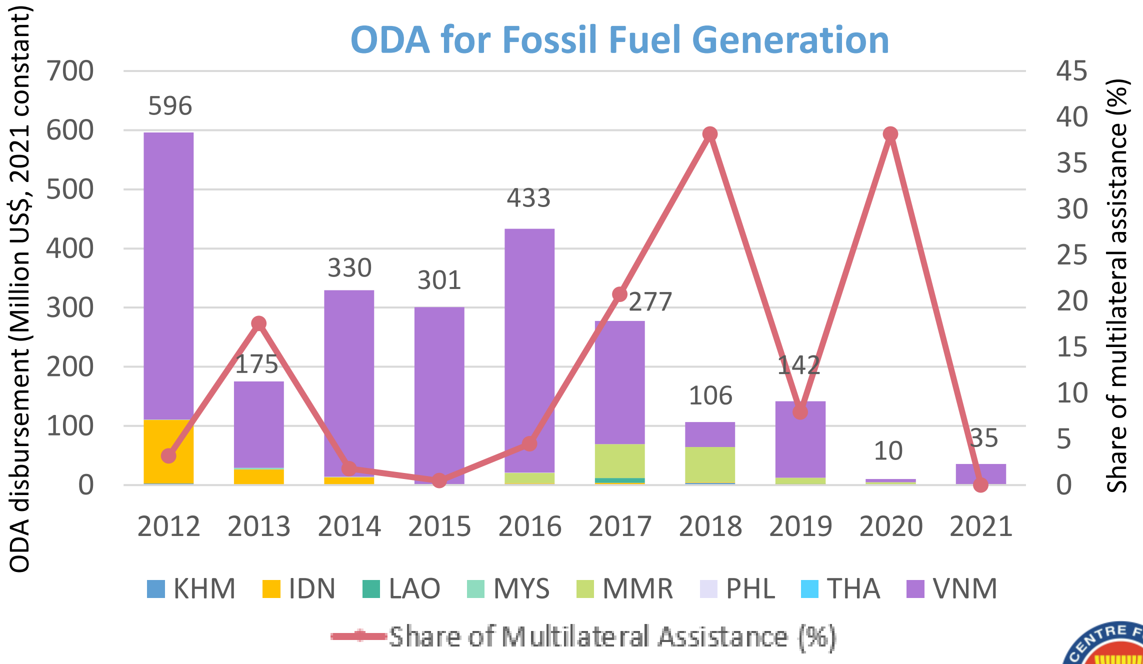
- Government expenditure
- Financial products, such as green bonds and loans

- FDI in decarbonisation projects
- Domestic investment

Power Sector ODA for AMS

- **US$2.24 billion have been disbursed** to renewable energy generation projects in AMS between 2012 and 2021.
  - Bilateral ODA (US$1.6 billion, 69%) has outweighed multilateral ODA (US$0.7 billion, 31%).
  - **Indonesia (44%) and Vietnam (34%)** have been the most significant recipients.
  - **Hydroelectric generation and geothermal generation** were two major RE technologies.
- While RE ODA shows a gradually increasing trend except for 2019-2020 period, ODA for fossil fuel generation seems to decline.





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Data Source: OECD Creditor Reporting System (2023).

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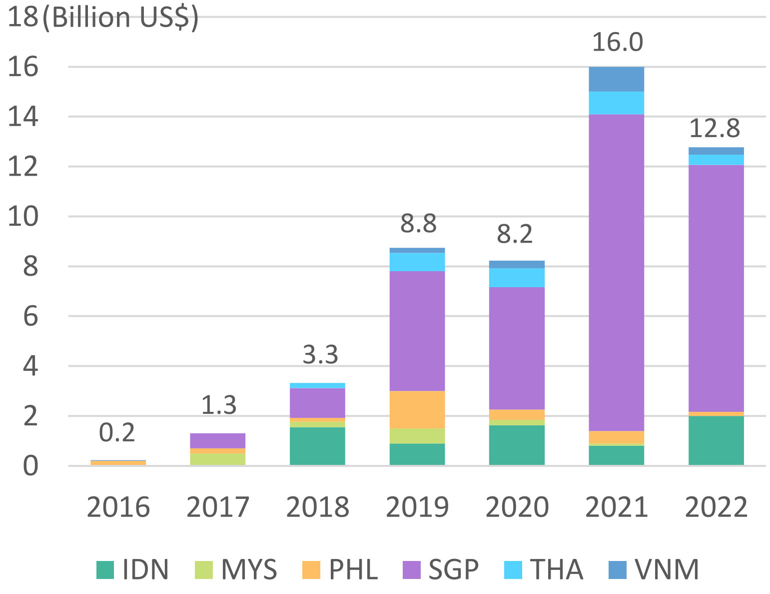
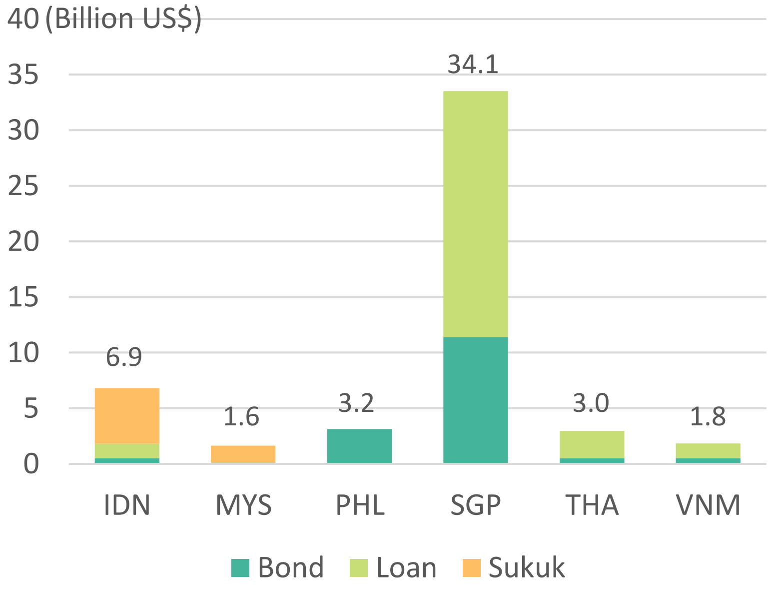
Green Bonds & Loans in AMS

- Green debt issuance, including green bonds, loans, and sukuks, was US$12.8 billion in 2022. The **cumulative amounts between 2016 and 2022 reached US$50.6 billion**.
- Almost 80% of proceeds have been allocated to green building and energy projects.
  - In Singapore, approximately 75% of proceeds have been used for green building projects.
  - In Malaysia, Philippines, Thailand and Vietnam, more than 50% of proceeds have funded energy projects.

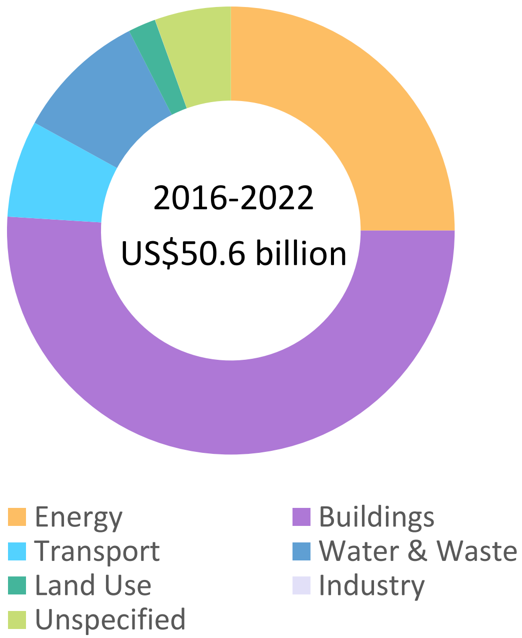
Green Bond & Loans (Amount Issued)



Type of Debts (Cumulative)



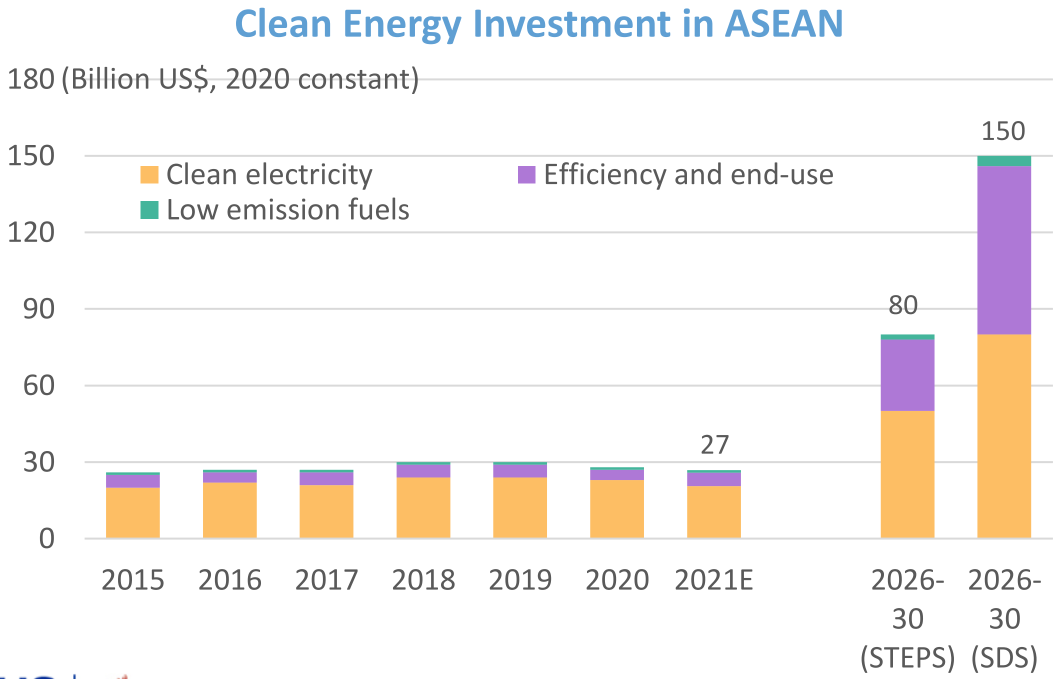
Use of Proceeds (Cumulative)

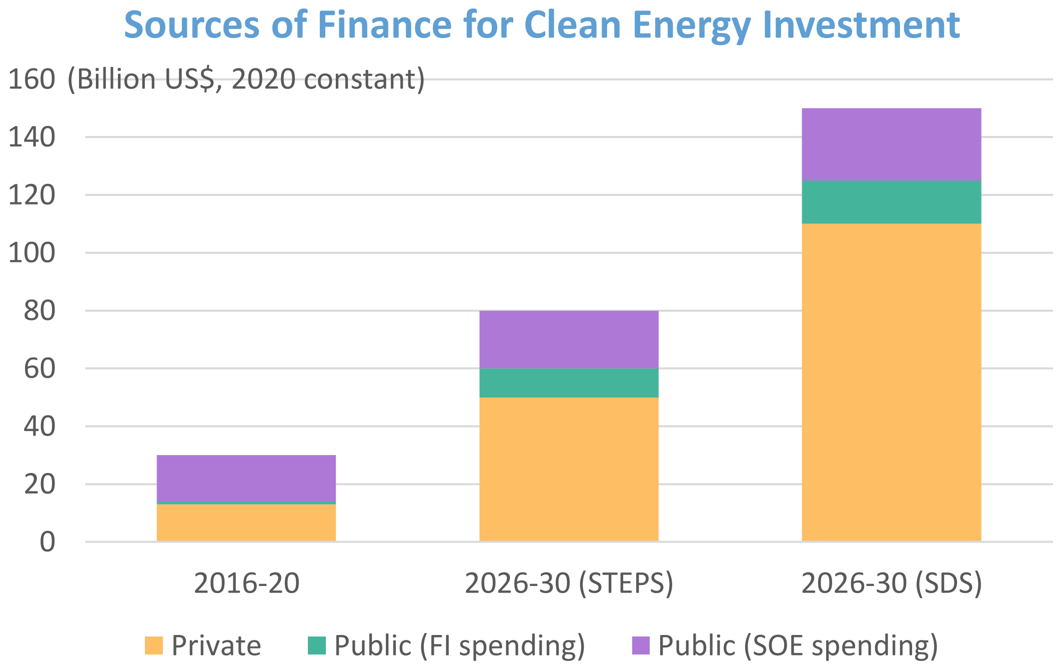


Data source: Almeida and Wong (2023); CBI (2023).

Clean Energy Investment

- Clean energy investment in Southeast Asia in 2021 was estimated at US$27 billion.
- Annual clean energy investment has never exceeded US$30 billion but has to increase to US$150 billion to comply with SDS.
- Clean energy investments in Southeast Asia have relied heavily on public sources of finance but in the SDS **over 70% of investments are required to come from private capital**.

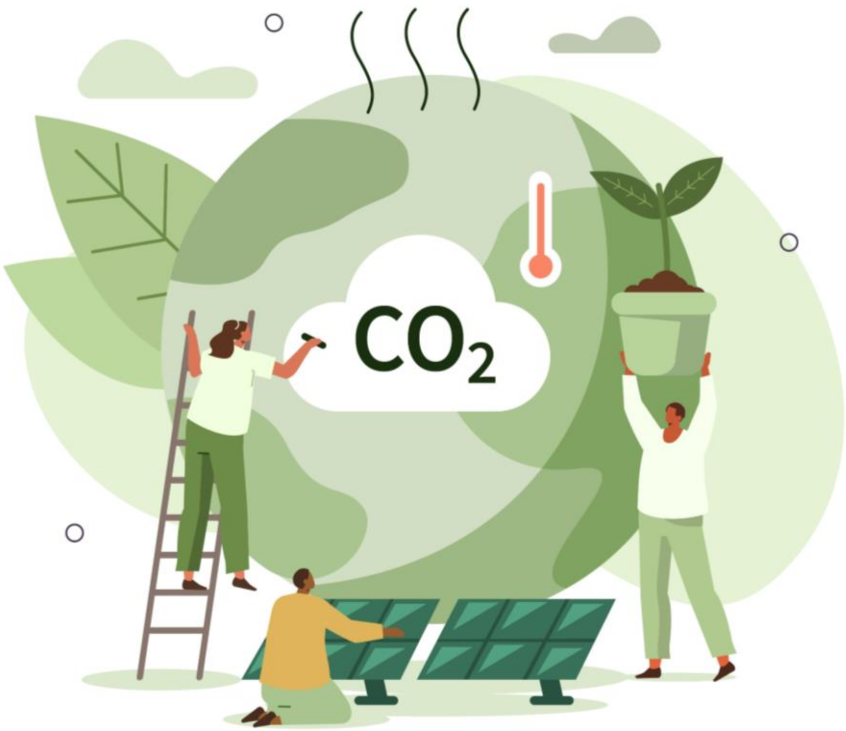




Source: IEA (2022).

In This Roundtable

- Discuss the current and future energy investment landscape.
- Explore the solutions to bridge the gap between the current trajectory and the targets, including
  - Identifying innovative financial sources;
  - Setting the budget allocation; and
  - Building strong collaboration between the public with the private sector and international funding.



References

- ACE (2022). *The 7th ASEAN Energy Outlook 2020-2050.* ASEAN Centre for Energy (ACE): Jakarta.
- Almeida, M. and Wong, C.X. (2023). *ASEAN Sustainable Finance State of the Market 2022*. Climate Bonds Initiative (CBI): London.
- APAEC Drafting Committee (2020). *ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025, Phase II: 2021-2025*. ASEAN Centre for Energy (ACE): Jakarta.
- ASEAN Secretariat (2023). *ASEAN Strategy for Carbon Neutrality*. Final Strategy – July 2023. Supported by the Australian Government through the Australia for ASEAN Futures Initiative. ASEAN Secretariat: Jakarta.
- CBI (2023). *Interactive Data Platform*. https://www.climatebonds.net/market/data/ (Accessed on 20 October 2023).
- IEA (2022). *Southeast Asia Energy Outlook 2022*. International Energy Agency (IEA): Paris.
- IRENA and ACE (2016). *Renewable Energy Outlook for ASEAN: A REmap Analysis*. International Renewable Energy Agency (IRENA): Abu Dhabi and ACE: Jakarta.
- OECD (2023). *OECD Creditor Reporting System*. https://stats.oecd.org/Index.aspx?DataSetCode=crs1 (Accessed on 20 October 2023).

THANK YOU

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For any inquiries, please contact Aldilla Noor Rakhiemah, Senior Research Analyst, ACE, aldilla.rakhiemah@aseanenergy.org and Tan Yong An, Fredrick, Assistant Manager, ESI-NUS, fredrick@nus.edu.sg.

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