



**HAPUA**

# The Development of the ASEAN Power Grid (APG)

2nd GMS Energy Transition Task Force Committee Meeting

Siem Reap, 4th December 2023

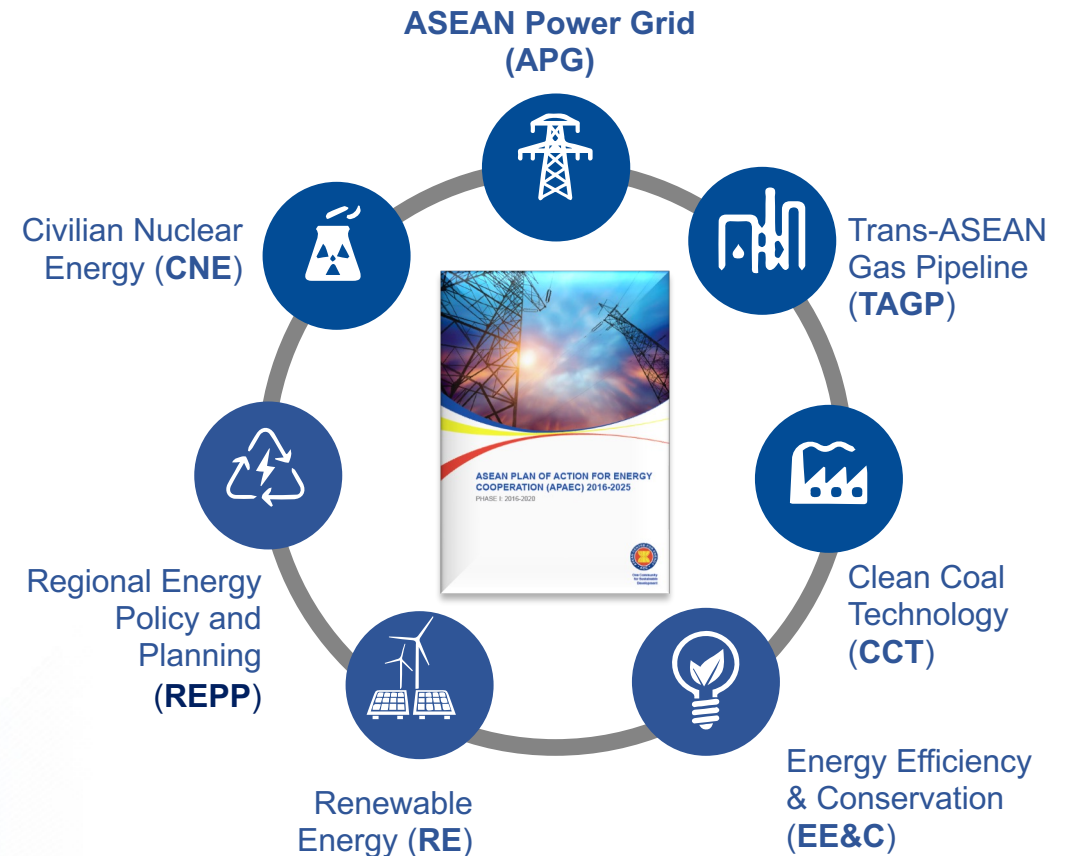
Regional blueprint for the energy cooperation in the ASEAN that builds on the success of APAEC Phase I: 2016-2020, sets out ambitious targets and initiatives to enhance energy security and sustainability and supports the UN SDG 7.

ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025 Phase 2: 2021-2025

- **Theme:** “Enhancing Energy Connectivity and Market Integration in ASEAN to Achieve **Energy Security, Accessibility, Affordability and Sustainability** for All”.
- **Sub-theme:** “Accelerating Energy Transition and Strengthening Energy Resilience through Greater Innovation and Cooperation.”



## APAEC Programme Areas





## Key Strategies:

*“To expand regional multilateral electricity trading, strengthen grid resilience and modernisation, and promote clean and renewable energy integration”*



## Outcome Based Strategies:



### OBS 1

Accelerate the completion of APG Project and initiate the expansion of multilateral electricity trading



### OBS 2

Work on Institutional framework and regulatory capacity as minimum requirement to advance multilateral electricity trading



### OBS3

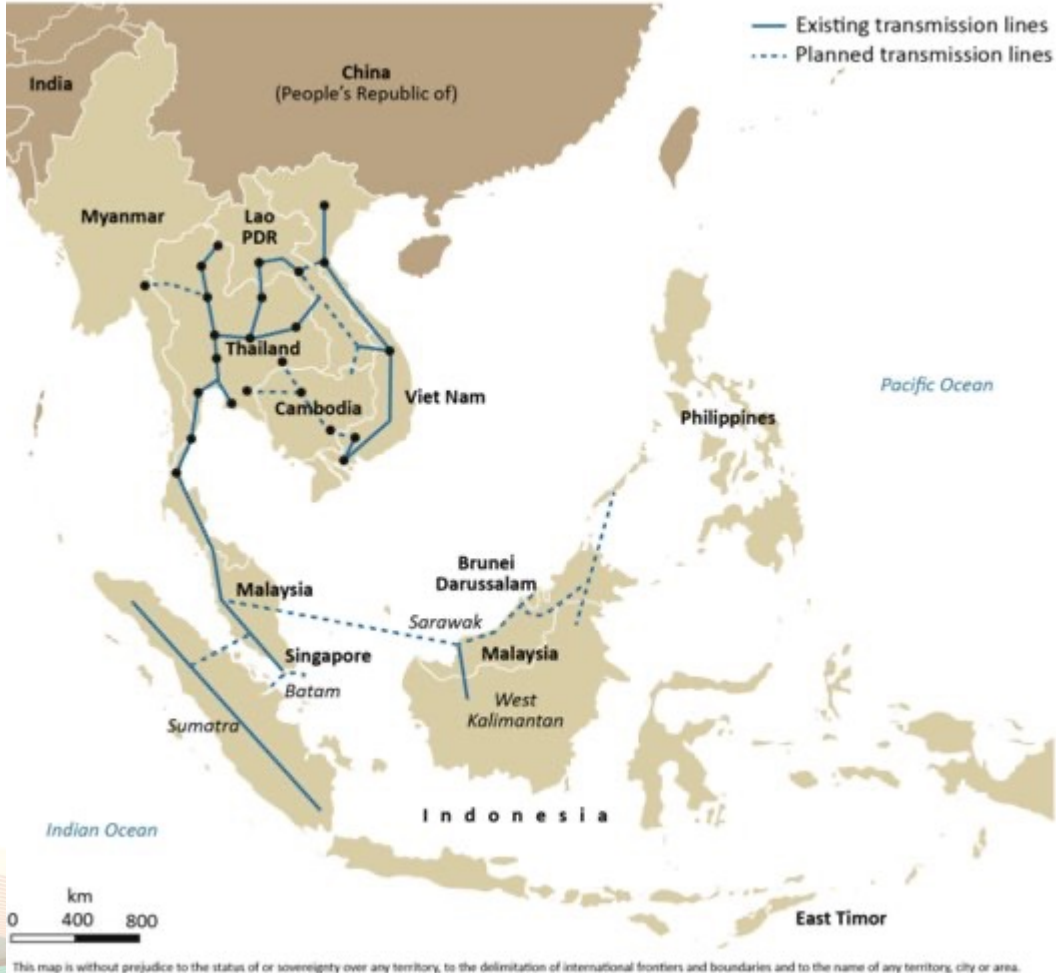
Work on harmonizing the minimum technical requirements to advance multilateral electricity trading



### OBS 4

Explore integrating renewable energy and other digital developments into APG Grid

The APG was one of the key components of the ASEAN Vision 2020, which included a resolution to establish interconnected grids for electricity (the APG) and natural gas (the Trans-ASEAN Gas Pipeline).

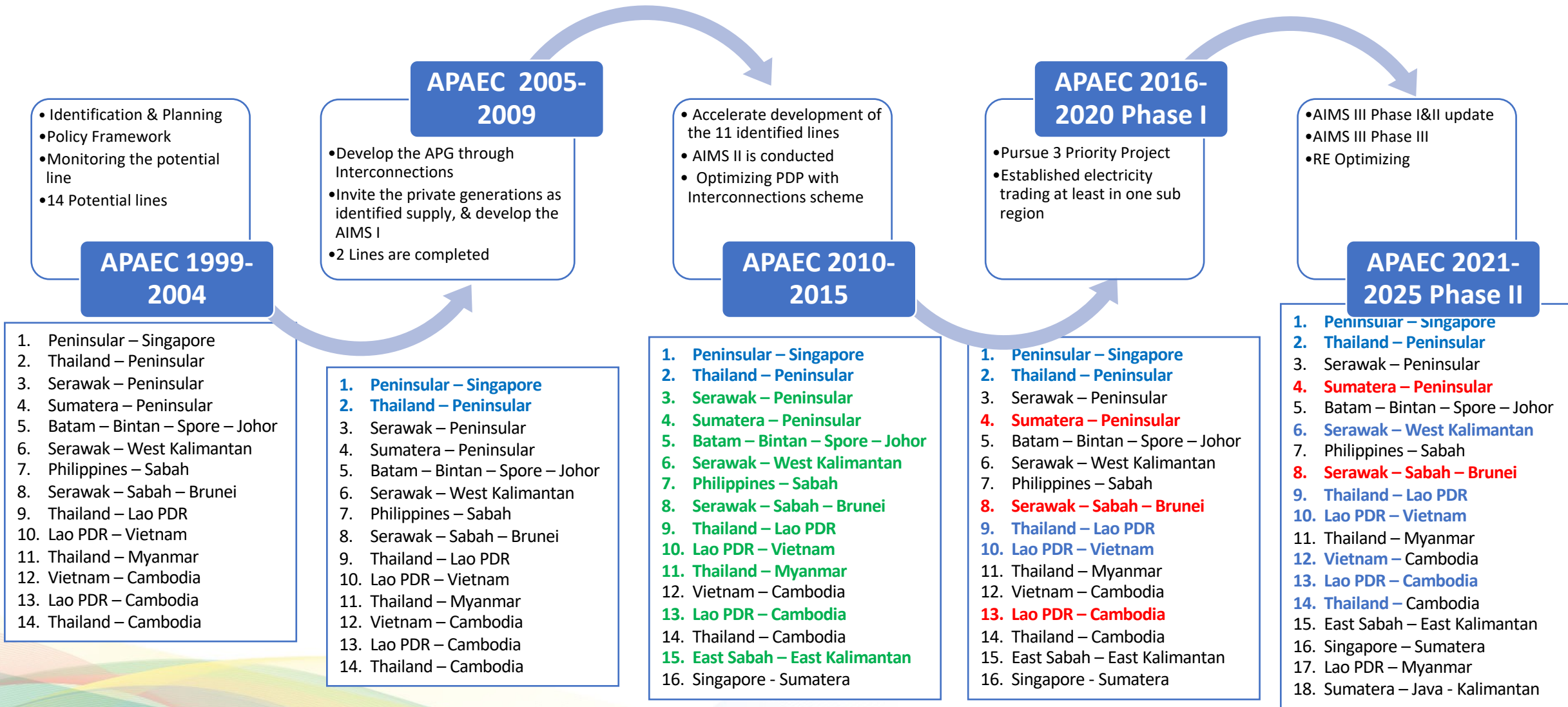


The proposal to connect the power grids all of the various AMS was first established at the Second ASEAN Informal Summit, held in Kuala Lumpur in December 1997.

The main objectives in establishing the APG were to:

- Promote more efficient, economic and secure operation of power systems through harmonious development of national electricity networks in ASEAN by region-wide interconnections.
- Optimize the use of energy resources in the region by sharing the benefits.
- Reduce capital required for generation capacity expansion.
- Share experiences among member countries.
- Provide close power co-operation in the region.

APG MOU was signed on August 27, 2007 and entry into force since 19 March 2009 & in force for 15 years until 19 March 2024.



Status	MW
Existing	7,720
Ongoing (up to 2023)	555 - 625
Future	18,669 – 22,369
<b>Grand Total</b>	<b>26,944 -30,714</b>

## LTM – PIP: phase 2



- Power purchase amount has been expanded **up to 300 MW**, transferred through the existing interconnection system between Lao PDR-Thailand-Malaysia
- EPWA was signed among tri-parties to push the LTM-PIP phase 2 into operation on December 27, 2019
- Operation Period is during Januari 2020-December 2021
- A total of **2,6 GWh** electricity has been traded as of **Dec 2021**



Completed

## LTMS – PIP

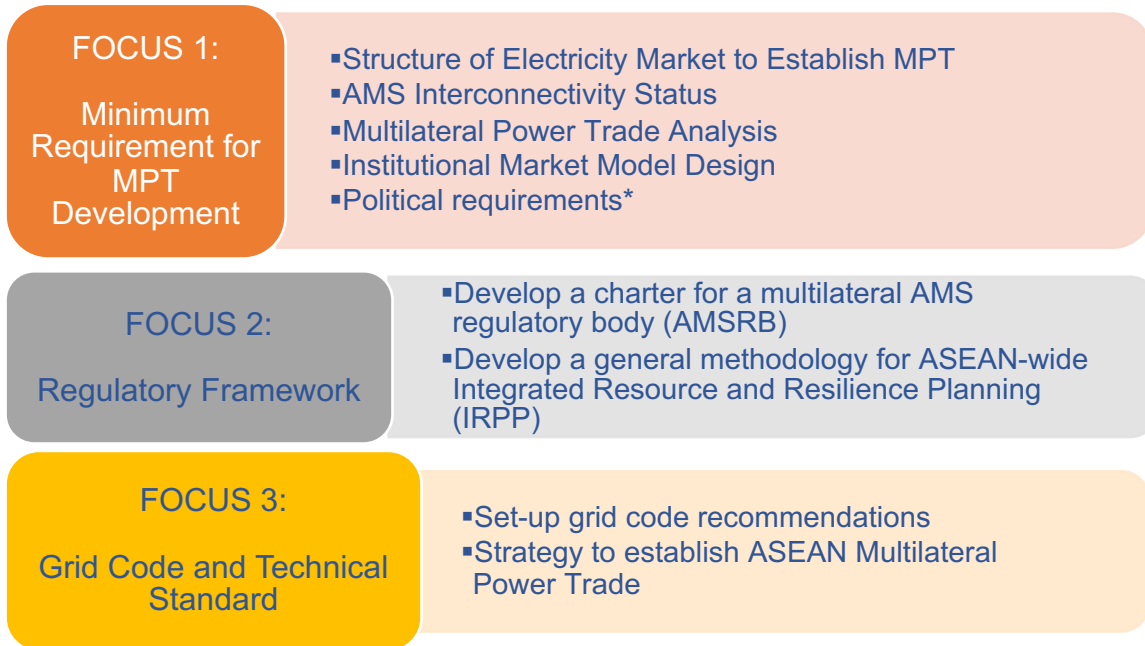


- Power Purchase amount is **up to 100 MW** through the existing interconnection system between **Lao PDR-Thailand-Malaysia-Singapore**
- Contract Period : 2 Years (2022-2024)
- Effective Date : 22<sup>nd</sup> June 2022
- 1<sup>st</sup> Power Flow date : 23<sup>rd</sup> June 2022
- Total of **265,73 GWh** electricity has been traded (as of July 2023)
- LTMS members are in the process of discussing on the next phase of LTMS (**Under Negotiation**)

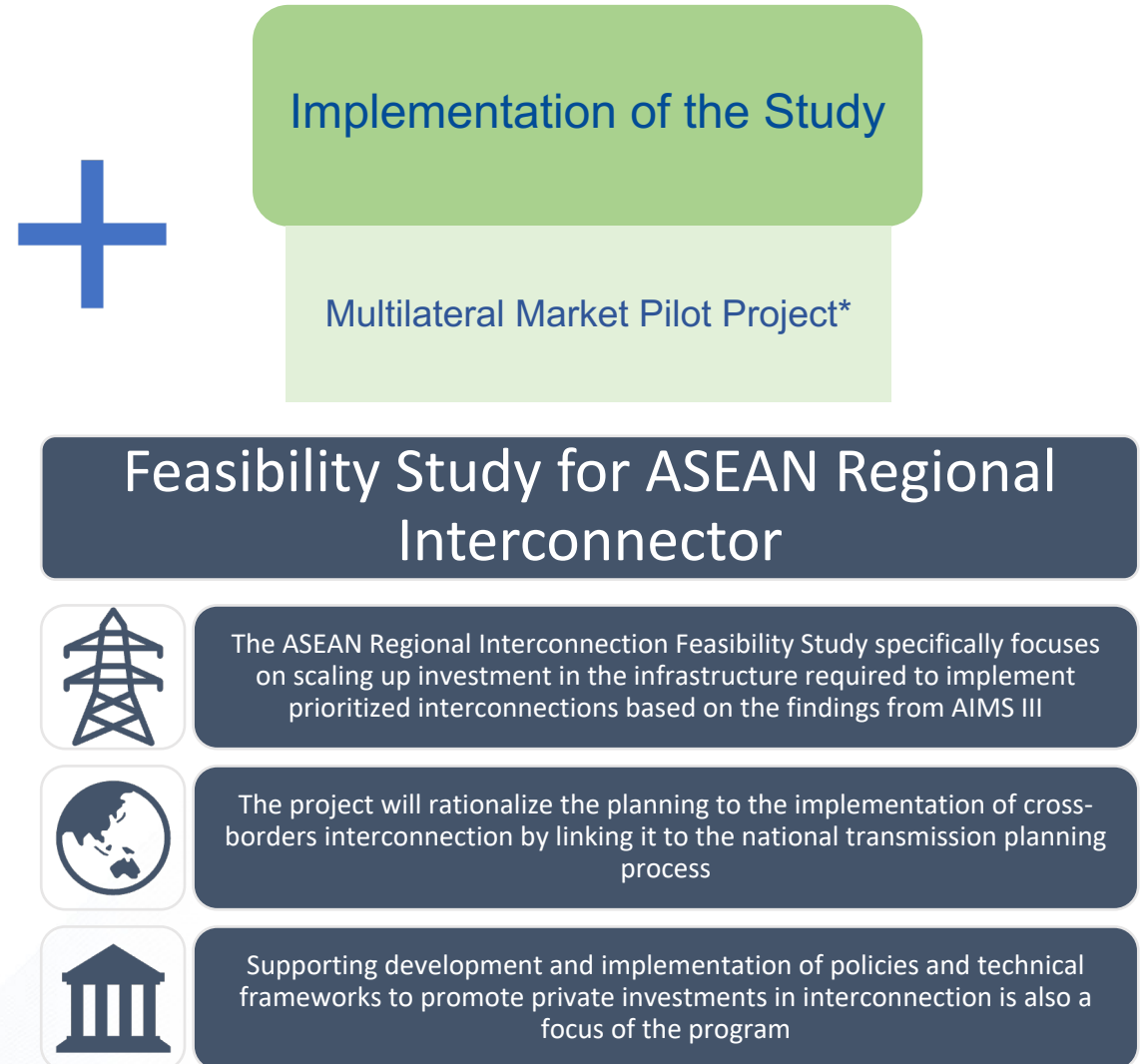


In Progress

The 39<sup>th</sup> AMEM Para #8: ... The Ministers looked forward to the progress of Phase 3 of the AIMS III study, which focuses on the further development of minimum requirements for multilateral market development, regulatory framework, and grid code and technical standard.



*\*New proposed scope as per latest directive from HAPUA Secretariat and HAPUA Working Group 2 during AIMS III Consultative Meeting on 2 March 2022.*



- **ASEAN Power Grid (APG) Consultative Meeting (19 June):**

- ❑ On the role of APG bodies, **AGREED** to recommend tasking the APG Consultative Committee (APGCC) as the lead body to prepare the successor APG MOU (instead of the Heads of ASEAN Power Utilities and Authorities or HAPUA) and **SUGGESTED** that the HAPUA Secretariat and ACE work together as the technical secretariat.
- ❑ Also **AGREED** to reflect the general roles of APG related bodies and **SUGGESTED** that the detailed roles of the APG related bodies be reflected in a reference document (e.g. TOR).
- ❑ On the extension/renewal of the APG MOU, **AGREED** to recommend the extension of the current MOU for 2 years to prepare the successor MOU and **TASKED** ASEC and ACE to prepare a detailed timeline for the preparation of the successor MOU.

- **41<sup>st</sup> AMEM on ASEAN Power Grid (APG):**

- ❑ **WELCOMED** the commencement of the process for extending the existing Memorandum of Understanding (MoU) of APG until 31 December 2025 and called upon all AMS and APG bodies to support APGCC as the lead body for the preparation of the successor APG agreement.
- ❑ **NOTED** the completion of the 2023 AP#6 through the conduct of the APG Consultative Meeting on way forward for the APG MoU especially on lead body, target for IoE signing, and drafting period for the successor MOU;
- ❑ **WELCOMED** the progress of efforts towards multilateral power trade including the Power Interconnection Projects (PIPs) that will (i) initiate the Brunei-Indonesia-Malaysia and the Philippines (BIMP)-PIP in 2023 and (ii) expand the capacity of the Lao PDR-Thailand-Malaysia-Singapore (LTMS)-PIP



Welcomed the commencement of the process for extending the existing Memorandum of Understanding (MoU) of APG until **31 December 2025**



- Called upon all AMS and APG bodies to support **APGCC as the lead body** for the preparation of the **successor APG agreement**.
  - Commended the initiatives to further expand MPT in the region, including the release of the Joint Statement initiating the Brunei Darussalam–Indonesia–Malaysia–Philippines Power Integration Project (BIMP-PIP) and the first anniversary of the Lao PDR–Thailand–Malaysia–Singapore Power Integration Project (LTMS-PIP)
- Noted the findings of the ASEAN Interconnection Masterplan Study III (AIMS III) Phase 1 and 2 Update to periodically **align AIMS with evolving national and regional power landscapes**, establish a long-term RE target under the next APAEC, and initiate more detailed analysis and formulate plans for higher capacity additions for the future prioritised interconnections.
  - Appreciated the progress of the projects and programmes that support the implementation of the APG vision across the region, such as the (i) AIMS III Phase 3, (ii) United States Agency for International Development Southeast Asia Smart Power Program (USAID SPP), (iii) Feasibility Studies on cross-border interconnection supported by the United States Trade and Development Agency, and (iv) the APG-Advancing Program (APG-AP) with the UN Office for Project Services and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH of Germany



THANK YOU

**Para #8.** ....The Meeting welcomed the commencement of the process for **extending the existing Memorandum of Understanding (MoU) of APG until 31 December 2025** and called upon all AMS and APG bodies to support APGCC as the lead body for the preparation of the successor APG agreement.

**Para #9.** The Meeting commended the initiatives to further expand MPT in the region, including the release of the Joint Statement initiating the **Brunei Darussalam–Indonesia–Malaysia–Philippines Power Integration Project (BIMP-PIP)**, which will complement existing efforts towards realising the APG under the AEC Blueprint, as well as the first anniversary of the **Lao PDR–Thailand–Malaysia–Singapore Power Integration Project (LTMS-PIP)**. The Meeting noted that the LTMS countries will work towards continued power trade of up to 100 MW and facilitate future discussions regarding further capacity and development of the LTMS-PIP. The Meeting also noted the collaboration on **cross-border electricity trading between Cambodia and Singapore via subsea cables**.

**Para #10.** The Meeting noted the accomplishments of the HAPUA Working Groups, including the completion of supportive studies in the power generation, transmission and distribution sectors and the conduct of capacity building activities to advance MPT, such as the ongoing studies on **‘Implementing Best Practices of Smart Grids in AMS’** and **‘Contractual Arrangements for the ASEAN Power Grid Multilateral Trade’**, and welcomed the continuing programs for training and talent exchange between ASEAN power utilities.

**Para #11.** The Meeting noted the findings of the **ASEAN Interconnection Masterplan Study III (AIMS III) Phase 1 and 2 Update** to periodically align AIMS with evolving national and regional power landscapes, establish a long-term RE target under the next APAEC, and initiate more detailed analysis and formulate plans for higher capacity additions for the future prioritised interconnections.

Final



JOINT MINISTERIAL STATEMENT  
OF THE 41<sup>st</sup> ASEAN MINISTERS ON ENERGY MEETING  
24 August 2023, Bali, Indonesia

1. The 41<sup>st</sup> ASEAN Ministers on Energy Meeting (AMEM) was hosted by Indonesia on 24 August 2023. H.E. Arifin Tasrif, Minister of Energy and Mineral Resources of Indonesia, chaired the Meeting. H.E. Phosay Sayasone, Minister of Energy and Mines of Lao PDR was the Vice Chair. The associated dialogue sessions with the Director General of the International Renewable Energy Agency (IRENA) and the Deputy Secretary of Energy of the United States were also conducted in conjunction with the 41<sup>st</sup> AMEM. The Deputy Secretary-General of ASEAN for ASEAN Economic Community (AEC) was also in attendance. The Meeting also welcomed the Minister of Petroleum and Minerals of Timor-Leste as Observer.

2. The Joint Opening Ceremony for the 41<sup>st</sup> AMEM and the ASEAN Energy Business Forum (AEBF) 2023 was also officiated by H.E. Minister Arifin Tasrif. In his opening address, he emphasised the role of ASEAN as an epicentrum of growth that is marked by annual energy demand growth of 3% and an economic growth in 2023 which doubled from the previous year. He highlighted the key deliverable of Indonesia's 2023 Chairmanship which seeks to address the region's sustainable energy security through interconnectivity and emphasised that two-thirds of the region's growing energy demand could be met by renewables. He looked forward to ASEAN's interconnectivity platforms supporting the region's pathways towards energy sustainability, secure growth, and enabling support for investments and partnerships.

Joint Declaration on Sustainable Energy Security Through Interconnectivity

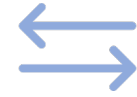
3. The Meeting adopted the Joint Declaration of the 41<sup>st</sup> AMEM on Sustainable Energy Security Through Interconnectivity which reaffirms the shared commitment and collective responsibility of ASEAN Member States (AMS) to enhance the role of regional interconnectivity and integration in ensuring sustainable energy security in the region.

4. The Joint Declaration, which serves as Indonesia's 2023 ASEAN Chairmanship's Priority Economic Deliverable (PED) on energy, called for greater enhancement of energy interconnectivity among others through the expanded implementation of the ASEAN Power Grid (APG) and the Trans-ASEAN Gas Pipeline (TAGP), including liquefied natural gas (LNG) infrastructure. The Joint Declaration builds on the success of existing ASEAN interconnection projects by pursuing an aspirational regional target for interconnection of AMS towards 2045, in line with the 20-year timeframe of the ASEAN Community's Post-2025 Vision, as well as, to accelerate the just and inclusive energy transitions while ensuring energy security, reliability, accessibility, sustainability, resiliency, and affordability.



## AIMS I (2003)

- Proposed regional electrical power transmission network: ASEAN Power Grid (APG).
- Identified potential saving in new investment and operating costs on interconnection.



## AIMS II (2010)

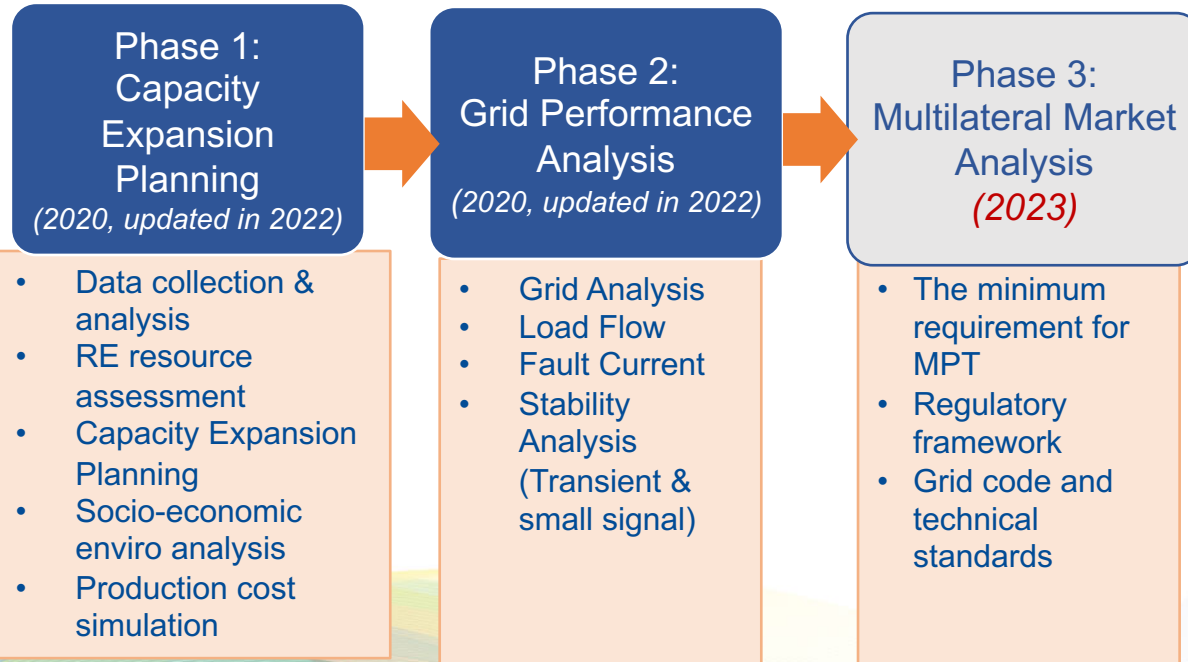
- Updated APG: changes in economic situation, electricity demand, energy requirement.
- Primarily made to plan APG through interconnection and to promote efficient, economical, and secure power system.



## AIMS III (2020) & Update (2022)

- Update APG plan under AIMS II
- Focus on increasing RE integration (as part of the ASEAN's target for having 23% share of RE in ASEAN's energy mix by 2025) through greater interconnections
- Time horizon up to 2040.

## What are the scope of AIMS III?



## Who are involved?

