

# **ISEAS-RIETI JOINT Webinar**

## **Climate Action by Japan and Implications for Southeast Asia**

Thursday, October 7, 2021

### **Mr. SODA Takeshi**

Director for International Affairs, Agency for Natural Resources and Energy (ANRE),  
Ministry of Economy, Trade and Industry (METI), Japan

# **Japan's support for Energy Transitions in Asia**

---

**October, 2021**

## 2050 Carbon-Neutral Declaration and 2030 Climate Goal

- In October 2020, Prime Minister Suga declared that by 2050 Japan will aim to reduce greenhouse gas emissions to net-zero, that is, to realise a carbon-neutral, decarbonised society.
- At Leaders Summit on Climate in April 2021, Prime Minister Suga announced that Japan aims to reduce its GHG emissions by 46 percent in FY 2030 from its FY 2013 levels.

### Prime Minister's remarks at Leaders Summit on Climate

Japan aims to reduce its greenhouse gas emissions by 46 percent in fiscal year 2030 from its fiscal year 2013 levels, setting an ambitious target which is aligned with the long-term goal of achieving net-zero by 2050.

Furthermore, Japan will continue strenuous efforts in its challenge to meet the lofty goal of cutting its emission by 50 percent.



# Divestment from fossil fuels

- The World Bank and European financial institutions have announced their tough stance on fossil fuel financing.
- Asia Development Bank (ADB) is also planning to stop financing oil and natural gas field exploration, and coal-fired capacities.



2013: Stop financing coal  
2019: Stop financing upstream oil and gas



2021: Stop funding oil, gas and coal projects  
at the end of 2021



2020: End to finance oil production with routine venting and flaring (burning excess gas)



Stop providing state export guarantees by;  
2021: Dirty forms of oil such as shale  
2025: Exploration & development of new oilfields  
2035: Exploration & development of new gasfields

## **ADB DRAFT(as of August 16th)**

- ADB will not support any natural gas exploration or drilling activities, and will be selective in its support for midstream and downstream natural gas.
- Natural gas projects in all categories must meet all of the following conditions;
  - i. No other low-carbon or zero-carbon technology, or combination thereof, can provide the same service at an equivalent or lower cost at a comparable scale.
  - ii. The project's operating lifetime is consistent with the carbon stabilization trajectory aiming to achieve carbon neutrality by about 2050, or by a time set by DMCs that is consistent with their nationally determined contributions (NDCs). The project also avoids long-term lock-in into carbon infrastructure and the associated risk of creating stranded assets.
  - iii. The project is economically viable considering the social cost of carbon and an operating lifetime consistent with (ii).

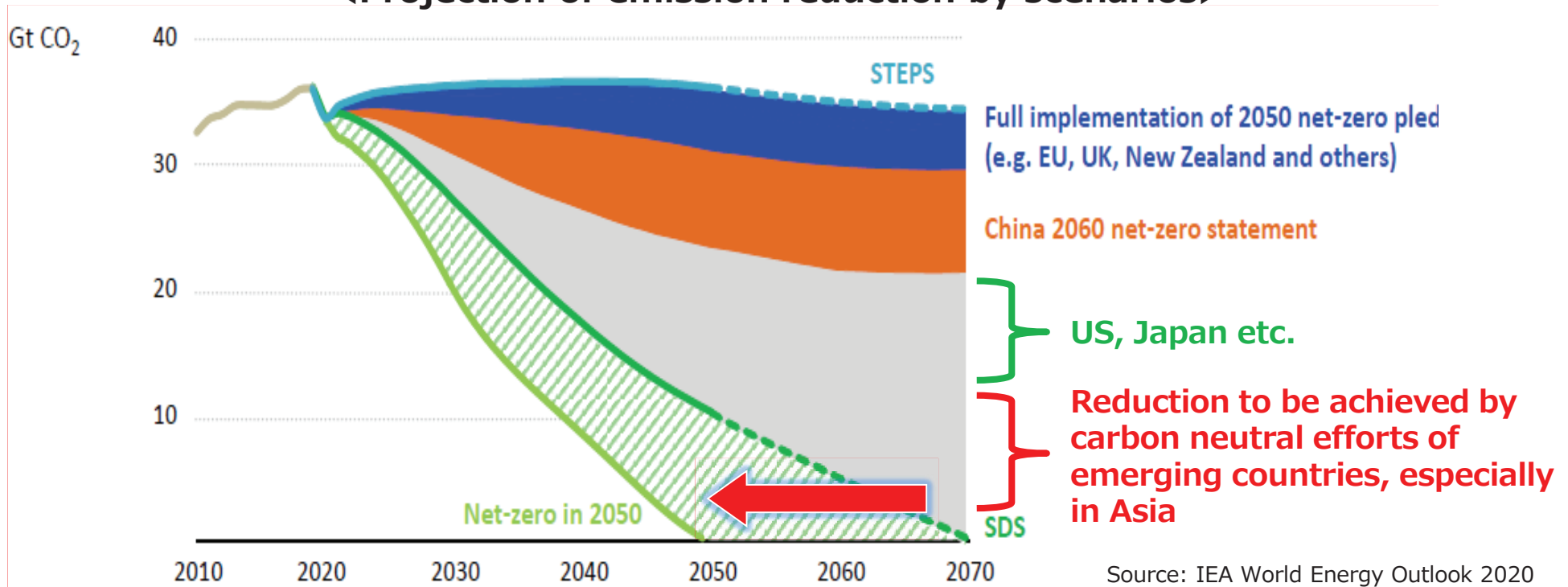
# Carbis Bay G7 Summit Communique



39. ...Internationally, we commit to aligning official international financing with the global achievement of net zero GHG emissions no later than 2050 and for deep emissions reductions in the 2020s. We will phase out new direct government support for international carbon-intensive fossil fuel energy as soon as possible, with limited exceptions consistent with an ambitious climate neutrality pathway, the Paris Agreement, 1.5°C goal and best available science...

Held on June 13<sup>th</sup>, 2021

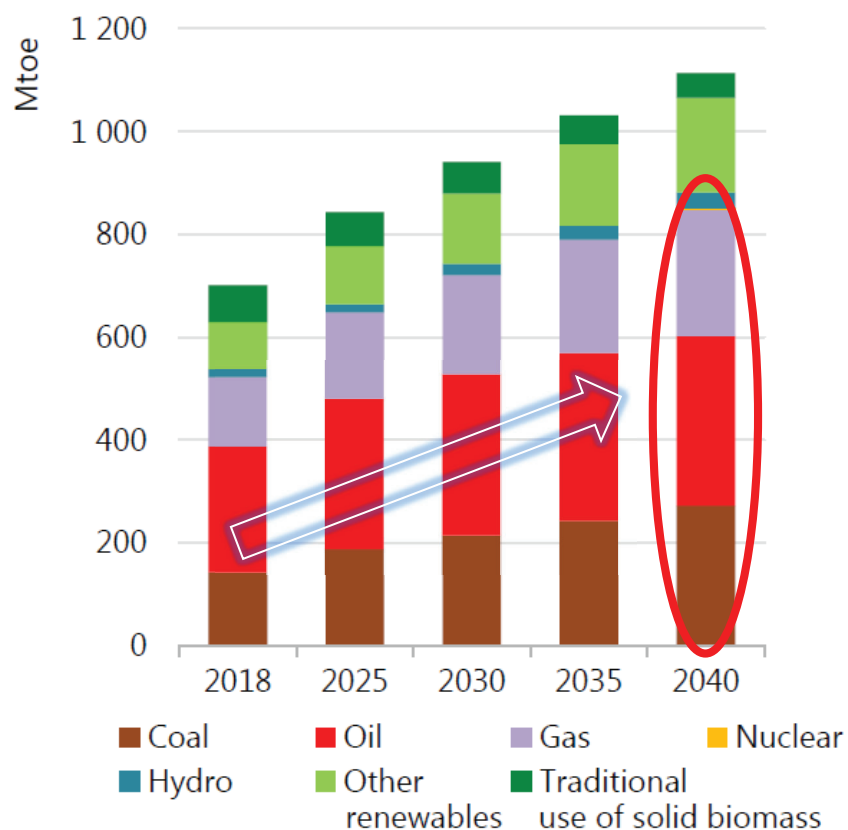
## <Projection of emission reduction by scenarios>



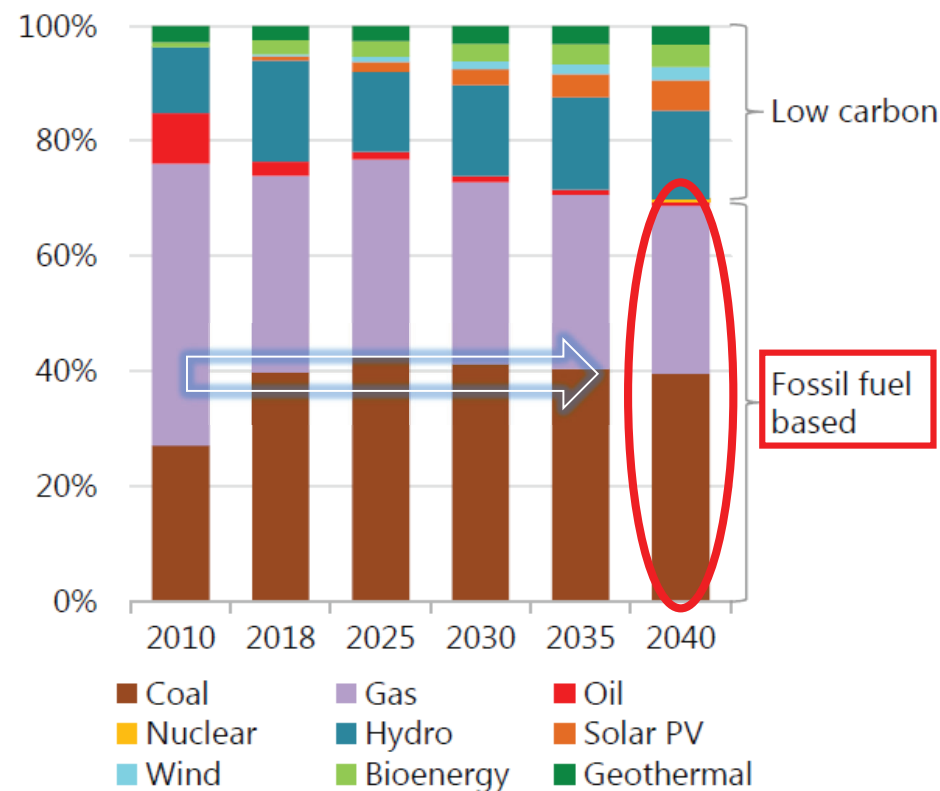
# Growing energy demand in Southeast Asia

- According to IEA's stated policies scenario (STEPS), overall energy demand in Southeast Asia grows by 60% to 2040. Fossil fuels still represent approximately 80% of total energy demand in 2040.
- Similarly, overall electricity demand doubles in the next 20 years in the region. The importance of fossil fuels remain unchanged, accounting for around 70% of total electricity consumption in 2040.

<Primary energy demand in Southeast Asia>



<Share of electricity generation by technology in Southeast Asia>

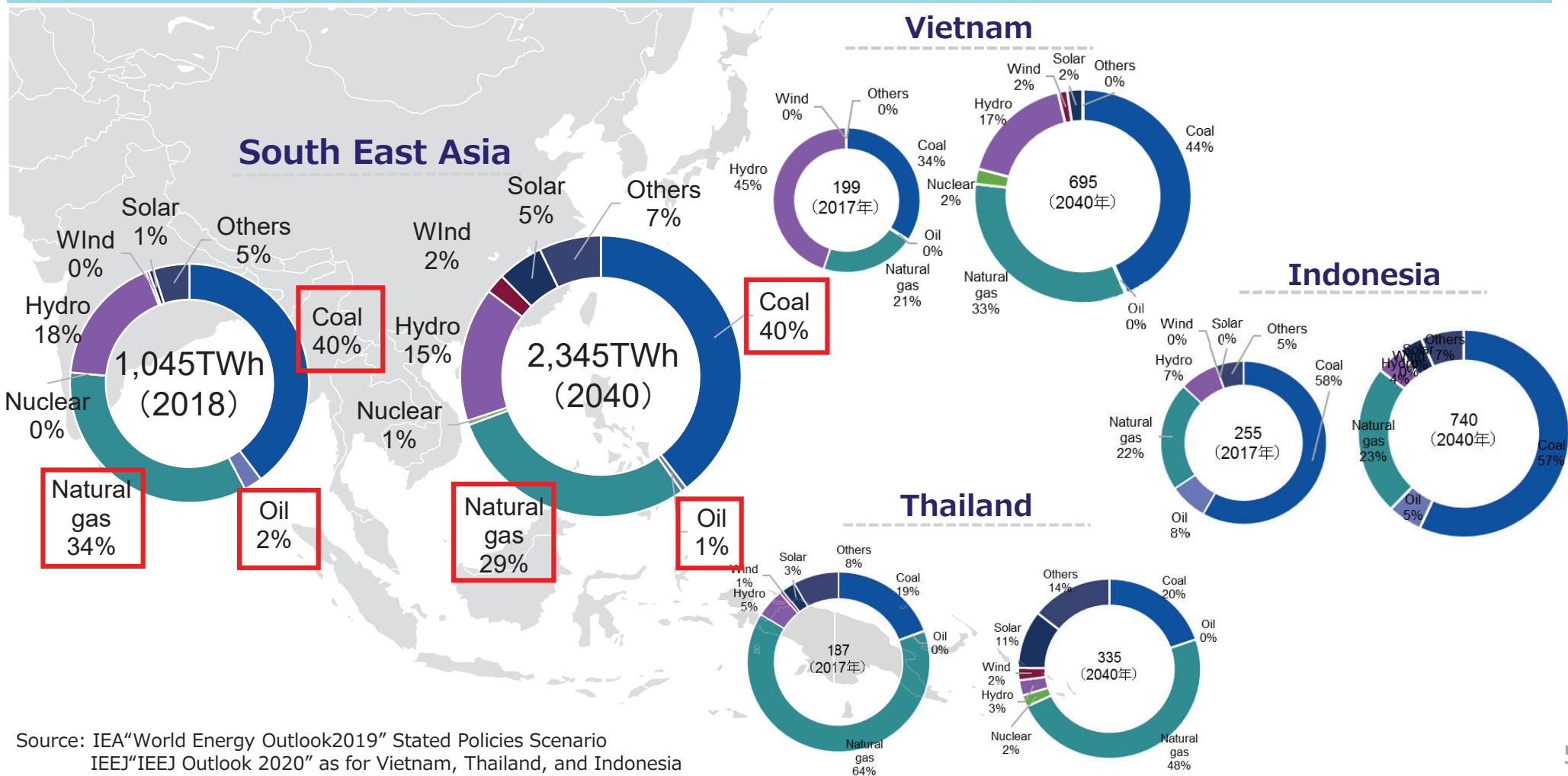


Source: IEA Southeast Asia Energy Outlook 2019



# Growing energy demand in Southeast Asia

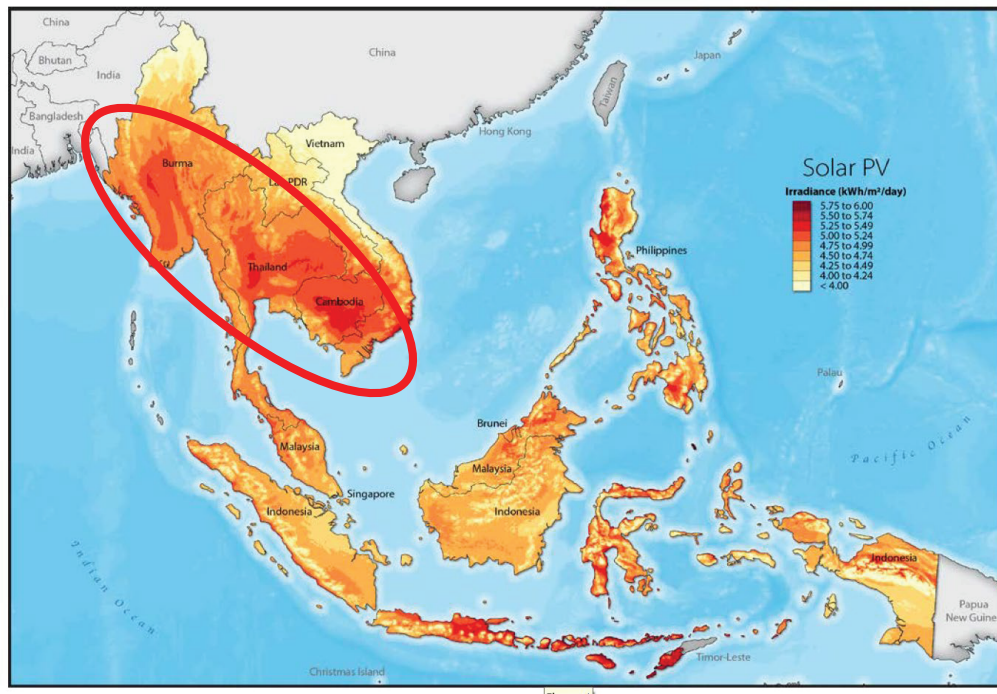
- In the Asia-Pacific region, IEA expects that fossil fuels will still be an important source of supply, even if a rapid shift to renewable energy occurs.
- Especially in Southeast Asia, where the access to electricity is still insufficient, the proportion of coal and natural gas will remain almost unchanged.



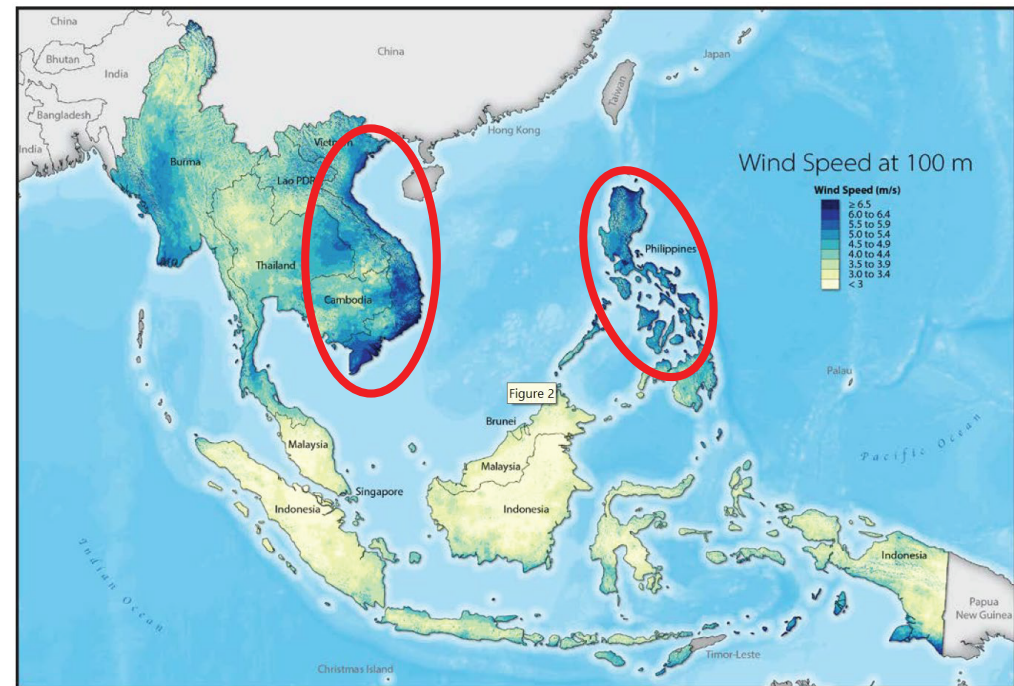
# Renewable energy potentials in ASEAN countries

- In ASEAN countries, renewable energy resource potentials are unevenly distributed.
- There are only a limited number of regions where renewable energy can be introduced at low costs.

## <Solar resource potentials in ASEAN countries>



## <Wind resource potentials in ASEAN countries>





# ASEAN+3 and EAS Summit in November 2020



Prime Minister Suga, participating in APT Summit(ref.) CABINET PUBLIC RELATIONS OFFICE

<Commitment for Asia>

Japan will fully support **realistic** and sustainable decarbonisation and energy transition initiatives, which are suitable to current situation in Asia.

## Chairman's Statement of the 23<sup>rd</sup> ASEAN+3 Summit

- We **acknowledged the importance of realistic and pragmatic energy policy by utilising appropriate energy sources and technologies** for achieving both goals of economic growth from COVID-19 pandemic and reducing emissions of greenhouse gases.

## Joint Statement of the 17<sup>th</sup> ASEAN+3 Ministers on Energy Meeting

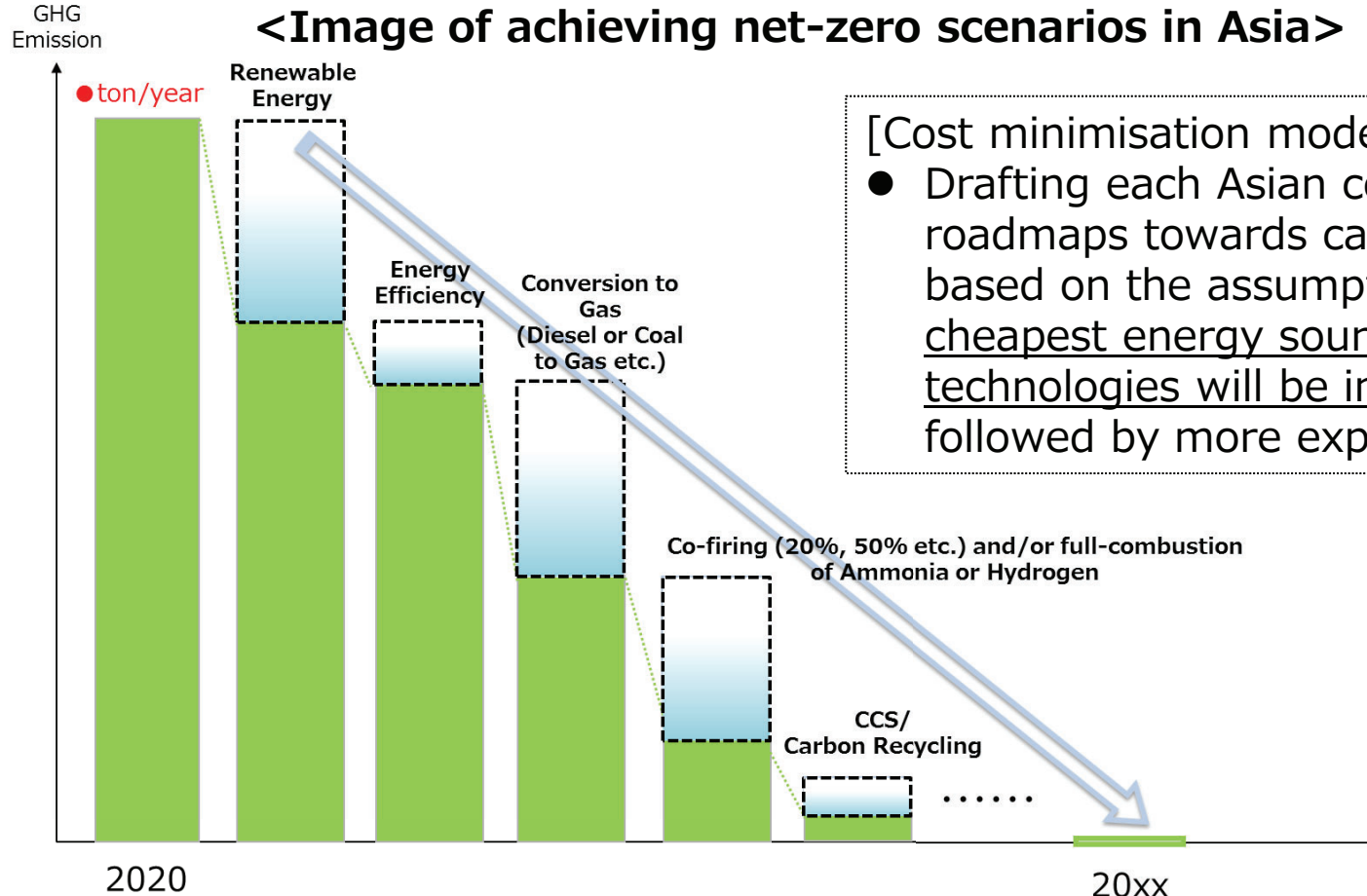
- The Ministers recognised that **energy transition in ASEAN is focusing not only on shifting from fossil fuel to renewables**, but also to affordable, reliable, and resilient cleaner energy options and technology towards post-pandemic recovery.

## Joint Statement of the 14<sup>th</sup> East Asia Summit Energy Ministers Meeting

- The Ministers **reiterated the importance of promoting the utilisation of liquefied natural gas (LNG) and development of infrastructure** to support LNG markets in the region.
- The Ministers **noted the conduct of the LNG Producer Consumer Web Conference 2020.**

# Roadmap towards carbon neutrality in Asia

- In order to attract foreign investment, it is essential for each Asian country to (1) declare to achieve carbon neutrality (not requiring its target year) and (2) draw its own roadmap towards carbon neutrality.  
⇒ Japan will support the drafting of roadmaps in collaboration with ERIA.
- Japan will support projects and activities designated in each country's roadmaps towards carbon neutrality, and present the new concept of "Asian version of Transition Finance".



## [Cost minimisation model]

- Drafting each Asian country's roadmaps towards carbon neutrality based on the assumption that the cheapest energy sources and technologies will be introduced first, followed by more expensive ones.

## Coal to Gas (Potential CO2 Reduction Estimates)

### Converting all existing coal-fired power plants to gas-fired ones in the following Asian countries

- **864 million tonnes** per year of CO2 emission\* can be reduced with incremental LNG demand of **166 million tonnes\*\***.

\* 864 million tonnes of CO2 equals to **around 71% of annual GHG emissions in Japan** (1.2bil tonnes-CO2, 2019)

\*\* 166 million tonnes of LNG are **over two times of LNG import volume in Japan** (77.3 mil tonnes, 2019)

Country	CO2 Reduction	Incremental LNG
India	577 million tonnes	112 million tonnes
Indonesia	120	21
Vietnam	58	11
The Philippines	36	6.9
Malaysia	53	10
Thailand	21	4.2
Myanmar	0.7	0.1
<b>Total</b>	<b>864 million tonnes</b>	<b>166 million tonnes</b>

Note: All figures are calculated and estimated by IEEJ

# Ammonia/Hydrogen power generation technology

- Towards 100% Ammonia or Hydrogen power generation by 2050, co-firing technology has been established in Japan.

		Ammonia	Hydrogen
Technology status		20% co-firing demonstration in actual large-scale equipment (1GW) will start from 2021FY (around 3 years).	<ul style="list-style-type: none"> <li>• 10% co-firing in small-scale (1MW) equipment has been demonstrated.</li> <li>• R&amp;D for 10% co-firing in large scale equipment is underway. (* To be established by FY2024)</li> </ul>
2030 Target	Co-firing ratio	<b>20%</b> (*Co-firing with large-scale coal-fired power)	<b>10%</b> (* Co-firing with large-scale gas-fired power plants)
	CO2 reduction	<b>20% of total</b>	<b>10% of total</b>
Future steps		<ul style="list-style-type: none"> <li>• <u>Increase of co-firing ratio (&gt;50%)</u> R&amp;D: 2020s – 2030s Commercialization: mid-2030s – mid- 2040s</li> <li>• <u>100% Ammonia power generation</u> R&amp;D: 2020s Commercialization: 2040s –</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Co-firing(10%) and 100% hydrogen power generation</u> Large Scale Demonstration: mid-2020s - Commercialization: 2030-</li> </ul>

# Asia Energy Transition Initiative (AETI)

- Japan announced “Asia Energy Transition Initiative (AETI)”, which includes a variety of support for the realisation of various and pragmatic energy transitions in Asia this May.

## Asia Energy Transition Initiative (AETI)

1. Support for formulating energy transition roadmaps
2. Presentation and promotion of the concept of Asia Transition Finance
3. US\$10 billion financial support for renewable energy, energy efficiency, LNG, CCUS and other projects
4. Technology development and deployment, utilizing the achievement of Green Innovation fund  
(e.g.) Offshore wind, Fuel-ammonia, Hydrogen etc.
5. Human resource development, knowledge sharing and rule-making on decarbonisation technologies
  - Capacity building of decarbonisation technologies for 1,000 people in Asian countries
  - Workshops and Seminars on energy transitions
  - Asia CCUS network



Announcement of AETI by Former Minister Kajiyama  
at Japan-ASEAN Business Week Opening Session



# Energy Transition Technologies

- To support various and pragmatic energy transitions in Asia, Japan will support potential energy transition technologies as follows:

## Renewable energy/ Energy efficiency

### <Potential Technologies>

- O&M technologies related to grid stability (Supply-side).
- Energy management technology including storage batteries (Demand-side).
- Energy efficiency in industrial /transportation sector, and buildings.



Storage battery for grid stability    DX in transportation sector

### <Cooperative approach>

- Capacity building, Assistance for FS and/or demonstration, Financial support to each project etc.

## Conversion to gas

### <Potential Technologies>

- Conversion to Gas (Coal to gas, Diesel to gas).



Gas turbine

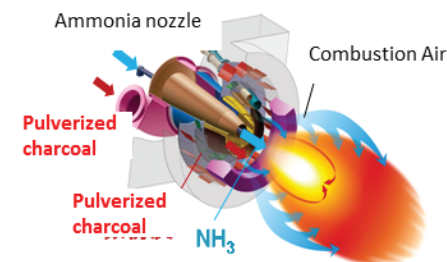
### <Cooperative approach>

- Capacity building, Assistance for FS and/or demonstration, Financial support to each project etc.

## Co-firing of ammonia/hydrogen

### <Potential Technologies>

- Co-firing or full-combustion of ammonia or hydrogen.



## CCUS

### <Potential Technologies>

- CCS/CCU (Carbon recycling)

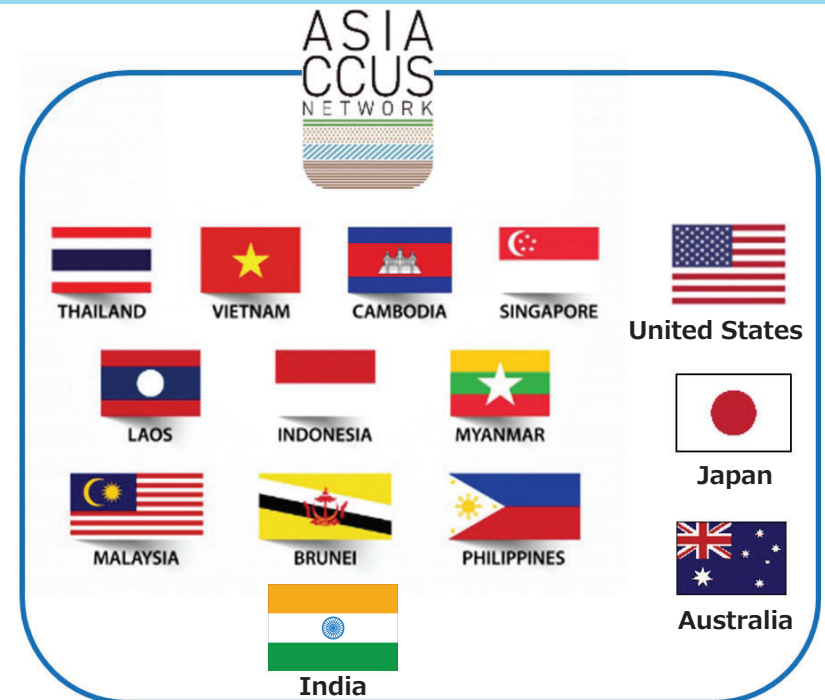
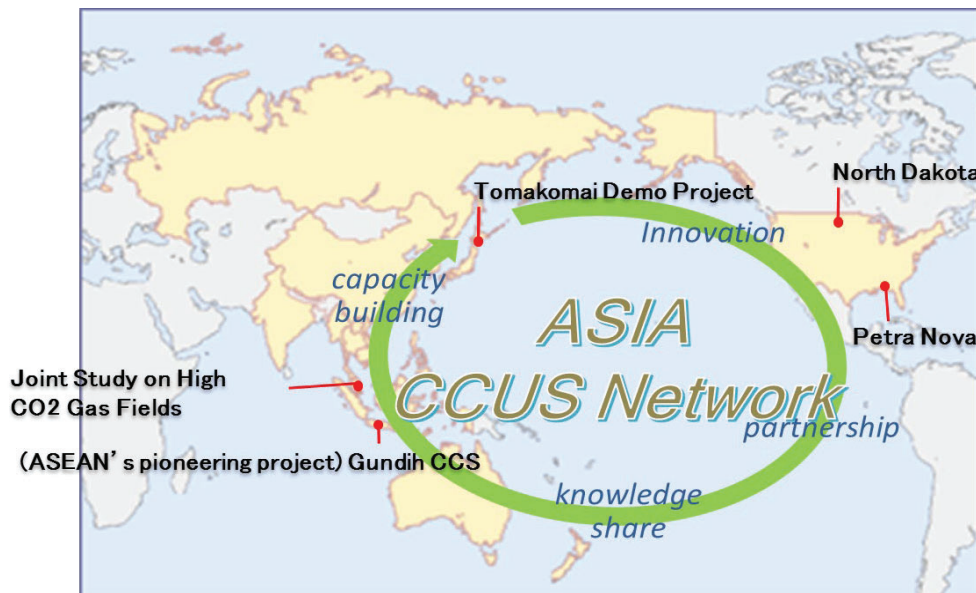
### <Cooperative approach>

- Establishing Asia CCUS network etc.

# Establishment of Asia CCUS Network

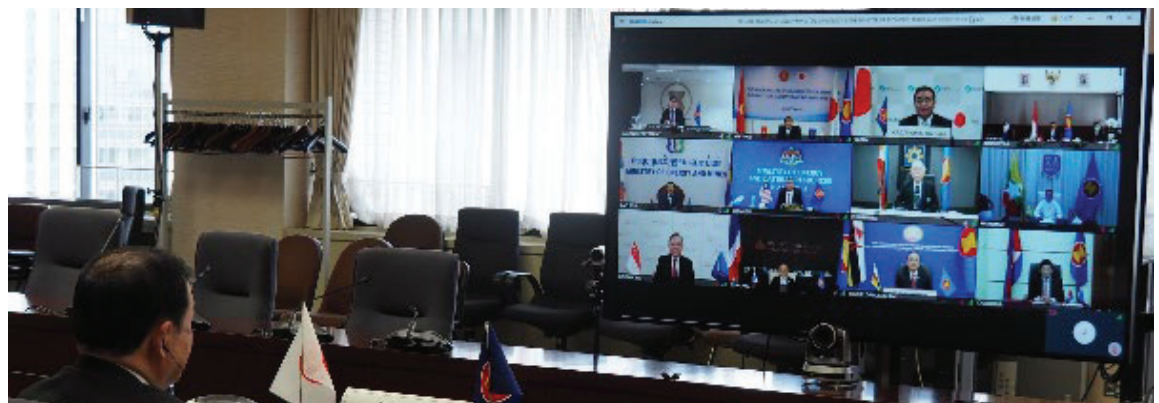
- For achieving carbon neutrality in Asia, it is necessary to promote CCUS cooperatively within the region, considering large storage potential of CO<sub>2</sub>.
- Japan, jointly with ERIA, will seek to establish CCUS Network as a venue for knowledge/experience sharing and research activities on CCUS.
- At East Asia Summit Energy Ministerial Meeting on 20<sup>th</sup> November 2020, the Ministers welcomed the cooperation initiative led by Japan and ERIA to establish the “Asia CCUS Network”
- Japan and ERIA launched “Asia CCUS Network” on 22<sup>nd</sup> June at the 1<sup>st</sup> Asia CCUS Network Forum in cooperation with industry, academia and governments of partner countries.

## <Image of Asia CCUS Network>



## Special Meeting of ASEAN Ministers on Energy and the Minister of Economy, Trade and Industry of Japan (Overview)

1. On 21<sup>st</sup> June, the Special Meeting of ASEAN Ministers on Energy and the Minister of Economy, Trade and Industry of Japan was held via video conference.
2. At the meeting, Former Minister Kajiyama emphasised that in order to achieve carbon neutrality throughout the world, it is important to steadily promote realistic energy transitions that utilize a wide range of energy sources and technologies, and reflect different circumstances of each country.
3. Former Minister Kajiyama also proposed the “Asia Energy Transition Initiative (AETI)” as a Japan’s comprehensive support measure for energy transitions in Asia.
4. ASEAN countries welcomed Japan’s initiative, and a joint statement which was adopted at the meeting, also included items of Japan’s proposal.
5. Japan will actively promote and share the importance of steady implementation of energy transitions toward the realization of carbon neutrality and efforts to support such transitions to the world through various opportunities.



## Special Meeting of ASEAN Ministers on Energy and the Minister of Economy, Trade and Industry of Japan (Summary of Former Minister Kajiyama's Statement)

### Former Minister Kajiyama's Statement at the meeting (Summary)

1. Japan will actively promote the development of innovative technologies and their implementation in society to achieve carbon neutrality by 2050 and 2030 emission reduction targets. Japan will also actively contribute to energy transitions and green growth in Asia.
2. Various and pragmatic energy transitions, which reflect different circumstances of each country and utilise all energy sources and technologies, are necessary to realise decarbonisation in Asia, where energy demand will continue to grow.
3. As international pressure on fossil fuels intensifies, it is concerned that financing will not be available for the energy infrastructure, which plays an important role for economic growth in Asia. Therefore, in order to attract foreign investment, it is important for each country to declare to achieve carbon neutrality, and develop its own roadmap for its realization.
4. Japan will support realistic energy transitions in Asia, which reflect different circumstances of each country, through "Asia Energy Transition Initiative (AETI)".
5. It is necessary to actively introduce and share idea and efforts for energy transitions in Asia to the world. The meeting is a starting point to spread these ideas and efforts to the world on the occasion of various international conferences such as ASEAN summit, the G20 and COP26.
6. Japan will hold the Asia Green Growth Partnership Ministerial Meeting in October, planning to invite ministers from Asian countries including ASEAN, the U.S., Canada, Australia, Middle Eastern countries and others to the meeting.

# Special Meeting of ASEAN Ministers on Energy and the Minister of Economy, Trade and Industry of Japan (Joint Statement)

## Joint Statement (Outline)

### "Enhancing Partnerships in Realising Energy Transitions in ASEAN"

1. The Meeting welcomed further collaboration between ASEAN and Japan, including with the Economic Research Institute for ASEAN and East Asia (ERIA).
2. The Meeting recognized that the ASEAN Member States are at various stages of economic development and differing geographical conditions, in order for the realisation of energy transitions.
3. The Meeting noted the unique energy policies of each country, which address energy security, economic competitiveness and environmental sustainability based on each country's circumstances.
4. The Meeting recognized the energy transition strategies, including but not limited to the expansion of multilateral power trading, development of common ASEAN gas market, the Clean Coal technology (CCT), CCUS, energy efficiency, renewable energy, acceleration of regional energy policy, and nuclear.
5. The Meeting noted the need to improve the utilisation of all energy sources, technologies, information, expertise, and related policies to meet the growing energy demand in ASEAN.
6. The Meeting affirmed the necessity of adequate financing to support the realisation of energy transitions in the region. The Meeting welcomed Japan's "Asia Energy Transition Initiative (AETI)", which includes a wide range of support for energy transitions in ASEAN, such as the proposed Asia CCUS Network, and studying the details of the Asia Energy Transition Finance concept.
7. The Meeting noted Japan's initiative to convene the Asia Green Growth Partnership Ministerial Meeting in October 2021.



# Schedule

- On October 4<sup>th</sup>, Japan held the first **Asia Green Growth Partnership Ministerial Meeting (AGGPM)**, to share the importance of realistic energy transitions.
- Japan will also share the outcomes of the meetings to the G20, COP26 and other related international conferences.

Jun. 21 <sup>st</sup>	Special Meeting of ASEAN Ministers on Energy and METI Minister of Japan
Jul. 23 <sup>rd</sup>	G20 Energy Ministers Meeting
Sep. 13 <sup>th</sup> -16 <sup>th</sup>	ASEAN Energy Ministers Meeting (AMEM Week)
21 <sup>st</sup> -27 <sup>th</sup>	UN General Assembly
Oct. 4 <sup>th</sup>	<u><b>Asia Green Growth Partnership Ministerial Meeting (AGGPM)</b></u>
26 <sup>th</sup> -28 <sup>th</sup>	ASEAN Summit
30 <sup>th</sup> -31 <sup>st</sup>	G20 Summit
Nov. 1 <sup>st</sup> -12 <sup>th</sup>	COP26



# Asia Green Growth Partnership Ministerial Meeting



**D a t e** October 4<sup>th</sup>, 2021

**Participants** ministers from 20 countries and representatives from 3 international organizations

<Indo Pacific> Brunei, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, India, Bangladesh, Sri Lanka, Uzbekistan, Australia, United States, Japan (Chair)  
<Middle East> Saudi Arabia, United Arab Emirates, Qatar, Iraq, Kuwait  
<International Organizations> ASEAN Secretariat, Economic Research Institute for ASEAN and East Asia (ERIA), International Energy Agency (IEA)

1. METI held the first **"Asia Green Growth Partnership Ministerial Meeting (AGGPM)"** online.
2. The participants discussed **the need to achieve green growth and accelerate various and realistic energy transitions toward global carbon neutrality in the earliest possible timing.** In particular, they affirmed that **there is no single pathway to achieve carbon neutrality, but rather there are diverse pathways for each country, and that promoting innovation and actively engaging Asian countries will be important.**
3. Former Minister Kajiyama delivered a video message in which he **emphasized that Japan will provide a wide range of support based on the "Asia Energy Transition Initiative (AETI)"** to accelerate energy transitions in Asia. **Many participants welcomed Japan's initiative.**
4. The participants **underlined the necessity of international cooperation for enhancing innovation and finance to support energy transitions in each country.**
5. **The Chair's Summary was issued** on the basis of the discussions in the meeting.



# Summary of Former Minister Kajiyama's remarks

1. It is necessary to realize global carbon neutrality in the earliest possible timing, to achieve the goals of the Paris Agreement. Asia is no exception to this. In Asia, energy demand is expected to grow alongside economic growth, meaning that greater efforts will be needed to achieve carbon neutrality.
2. There are a variety of energy transition pathways in each country. It is most effective to make efforts according to each country's economic, social and energy situation and technological capabilities.
3. It is necessary to utilize all fuel and all technologies approach not only energy efficiency improvement and renewable energy but also a variety of options such as nuclear power, hydrogen and ammonia, to promote energy transitions in a realistic way.
4. It is important to proactively engage with Asian countries. We all need to cooperate and establish mechanisms to attract investment and funding to ensure that no single country in Asia is left behind in its transition to a low-carbon society.
5. To accelerate energy transitions, it is necessary for each Asian country to chart a diverse and pragmatic pathway to energy transitions, which reflects its own circumstances, and aligns with the goals of the Paris Agreement.
6. Promoting innovation in decarbonization technologies, developing international power grids and supply chains of hydrogen and ammonia, and responding to the needs of the demand side are essential. Consequently, cross-border cooperation becomes crucial.
7. Japan will provide a wide range of support based on the "Asia Energy Transition Initiative (AETI)" announced this May.
8. Japan will convene the second AGGPM next fall, to share the outcomes and progress of energy transition efforts of each country.

# Summary of Dr. Birol's Opening remarks

1. There is no one size fits all for clean energy transitions and the pathway will be shaped by each country's circumstances and capabilities.
2. The pace and pathway in Asian countries might be different from that of other regions because Asia will continue to face a rapid economic growth.
3. 3 technologies: CCUS, low carbon fuels such as hydrogen and ammonia and LNG would play an important role for energy transitions.
4. Massive mobilisation of global financing is required to achieve carbon neutrality.



## Summary of discussions

The main issues elaborated by many participants are as below.

1. The necessity of various and realistic energy transitions
2. The necessity of the balance between economic growth and decarbonisation
3. Welcoming for Japan's support "Asia Energy Transition Initiative (AETI)"\*
4. The necessity of international cooperation for enhancing innovation
5. The importance of low carbon/decarbonisation technologies regarding hydrogen, ammonia, LNG, CCUS, and storage batteries
6. The importance of greater investment and financial support



\*AETI...Japan's initiative, which includes ①Support for formulating energy transition roadmaps, ②Presentation and promotion of the concept of Asia Transition Finance, ③US\$10 billion financial support for renewable energy, energy efficiency, LNG, CCUS and other projects, ④Technology development and deployment, utilizing the achievement of Green Innovation fund, Human resource development, knowledge sharing and rule-making on decarbonisation technologies

# Outline of the Chair's Summary of AGGPM

1. We acknowledged the need for all countries to make efforts and contributions to **achieve global carbon neutrality in the earliest possible timing in pursuing the Paris Agreement goals.**
2. We agreed that **there is no single pathway to achieve carbon neutrality, but rather there are diverse pathways for each country.**
3. We shared the **importance of taking all fuel and all technologies approach** to enhance energy transitions while meeting the growing energy demand in Asia. To this end, we confirmed that it is necessary to **promote innovations of various kinds that contribute to energy transitions,** through support for the research and development, and early commercialisation, of innovative technologies.
4. We welcomed **the readiness of relevant international organisations and research institutes such as the IEA and ERIA** to share knowledge and provide support to each country in considering its own pathway for energy transitions.
5. We welcomed Japan's **"Asia Energy Transition Initiative (AETI)"**.
6. We recognised **the importance of establishing mechanisms to attract investment and funding for various lower emissions and energy efficiency technologies and projects, positioned on the pathways outlined by each country,** in order to achieve energy transitions in Asia.
7. We acknowledged that it is essential to establish a framework that financially supports technologies and projects contributing to energy transitions, and to explore the study of the concept of **"Asia Transition Finance (ATF)" by the "Asia Transition Finance Study Group" led by private financial institutions.**
8. We recognised **the need for the working with relevant policymakers, private and academic sectors across countries** to accelerate energy transitions in Asia.
9. We looked forward to various meetings and workshops toward green growth, based on the discussions at the first AGGPM, noted **Japan's initiative to convene the second AGGPM in 2022.**



# Reference



# Asia Transition Finance

Outline of Study Group

October 4<sup>th</sup> 2021

# The Asia Transition Finance (ATF) Study Group is a private-led initiative – core members include Asian and global commercial banks

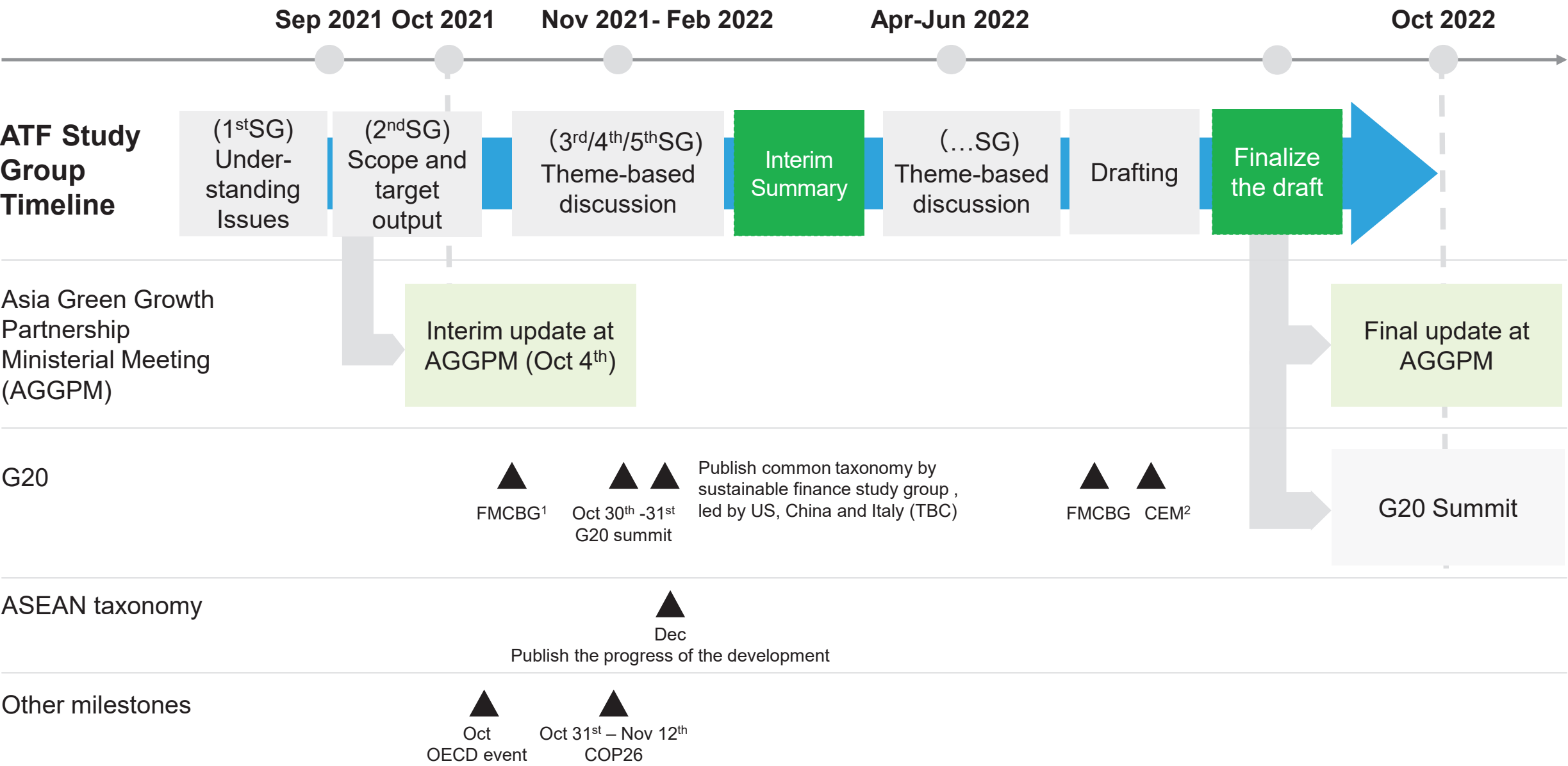
Category		Participants		(x) # of confirmed participants
Core members	Commercial banks (18)	<div>Asian banks</div> <div>            </div>	<div>Global banks</div> <div>        </div>	
	Development banks, ECAs and others (5)	<div>Multi-lateral</div> <div>  </div>	<div>State-affiliated</div> <div>    </div>	<div>Commercial</div> <div>  </div>
Observers	Public agencies (8)	<div>   </div>	<div>   </div>	<div>     </div>

# The ATF Study Group aims to provide practical guidelines for transition finance and to formulate recommendations to policy makers

Objectives, focus topics and expected output of the ATF Study Group

	<b>Objectives</b>	<ul style="list-style-type: none"><li>• Provide practical guidelines for financial institutions to fund transition activities</li><li>• Formulate recommendations to policymakers</li></ul>
	<b>Focus topics</b>	<ul style="list-style-type: none"><li>• Scope of Study Group activities (target sectors / instruments)</li><li>• Definitions of transition activities</li><li>• Principles to define transition activities</li><li>• Carbon offsets</li><li>• (Key focus) Decarbonization pathways, energy mix scenarios and technology roadmaps</li><li>• (Key focus) Usability/interoperability</li></ul>
	<b>Expected output</b>	<ul style="list-style-type: none"><li>• Guidelines for transition finance practitioners</li><li>• Recommendations to policymakers for establishing transition pathways (samples of how to use existing pathways)</li></ul>

# The ATF Study Group is expected to release an interim summary by March 2022 and final recommendations by October 2022



1. Finance Ministers and Central Bank Governors Meeting  
2. Climate and Energy Ministerial Meeting  
Source: Press search



# Special Website for AGGPM

- METI would keep this website as a platform and introduce the initiatives of private companies, academic organisations, and government agencies, which support accelerating energy transitions to achieve carbon neutrality and sustainable economic growth simultaneously in Asia.
- The information of relevant events and workshops would be informed as well.
- If you are interested in listing your engagement on this website, please feel free to contact METI team (asia-energy-transitionT@meti.go.jp).



<https://www.aggpm2021.org/english/>