

China's Cooperation with Southeast Asia to Support an Ambitious Clean Energy Transition by 2030

First Convening: Investment Needs and Green Finance Mechanisms

Meeting Summary

Welcoming remarks

This project aimed at expediting the adoption of clean energy in Southeast Asia through enhanced financial, technical, and policy collaboration between China and the region. The objective was to achieve a more significant reduction in greenhouse gas emissions through to 2030. A set of practical recommendations was generated for policymakers, financial institutions, and clean energy companies both in China and in Southeast Asia. We want these recommendations to help facilitate the greater uptake of clean energy across the region.

How do we maximize climate collaboration between the need for climate finance in Southeast Asia and the need for Southeast Asia to achieve high levels of climate ambition? And how do we bring that about in practical ways that involve the delivery of greater levels of climate finance into Southeast Asia, in particular from China? That is why we are together.

It will be critical for China and Southeast Asia to take ambitious action to address climate change and transition to clean energy from now til 2030. We must emphasize the need to increase efforts to implement effective policies, strategies, technologies, and finance, including replacing coal-based power generation with cleaner energy sources.

This can only be achieved with adequate finance and investment—no finance, no transition. To achieve a transition pathway in Southeast Asia that aligns with the goal of limiting global warming to 1.5°C, it will be necessary to invest approximately US\$500 billion in the region by 2030. That is a lot of money. But there is a lot of available investable capital in the region and beyond, in China and in other sources of investment capital elsewhere.

We find a good window of opportunity today in combining the major challenges of economic growth, energy security, and climate change, and killing three birds with one stone. This informs a “three-pronged framework” that brings together growth, finance, and climate change. In doing this thoroughly, our work in this high-level committee will be important. Where to invest and how to invest are the practical challenges of this group.

Keynote session

The Association of Southeast Asian Nations (ASEAN) is China's largest trading partner. Green trade products are an important component of free trade agreements (FTAs) between China and ASEAN. How can we strengthen this cooperation in free trade in green products/climate products? One proposal is for the tariff to be cut to zero on a list of green trade products. Agreement would need to be reached on the most important products to include in this list.

Additional components to consider alongside tariff reform include national subsidies and non-tariff barriers.

In relation to preparations for the meeting of the Asia-Pacific Economic Cooperation (APEC) at the end of this year, consider working with the APEC Secretariat and the APEC working groups to take these ideas further. Also consider opportunities with the Regional Comprehensive Economic Partnership (RCEP).

High-level committee and expert sessions

China plus one supply chain: Many people are concerned about a zero sum game between China and ASEAN countries regarding the migration of manufacturing capacity from China. However, it is not necessarily a zero sum game; instead, ASEAN countries and China can be complementary on many aspects. China could expand the supply chain, rather than purely respond to the pressure from the United States and other Western countries to supplement or replace the existing supply chain. Global business leaders believe that we are likely to end up with China plus one in terms of supply chains, with the plus one equaling Southeast Asia.

Navigating geopolitics of trade: We need to pragmatically and intelligently, through this group, navigate the geopolitics of trade. We should seek a climate change carve out from geopolitics in general and trade politics in particular.

Successful green investments: Basic requirements for successful investments from extensive experience include the following:

1. **Government support:** Full government support and policies to attract foreign investments are needed, including customs policies, duty policies, local content requirements, and so on.
2. **Project partners:** A successful project needs a successful partner. If only you make money, your project cannot last long. Your partner also needs to make money, creating a win-win situation.
3. **Local support:** The local government should support the project; its support is needed for the land, access, and other issues.
4. **Security:** The local and federal governments need to give their full support and guarantees that the project working environment is safe for the international staff.
5. **Economics:** Economic feasibility studies are important for the success of the project.

Social domain: The social domain is also important for investment in the country. Energy transition needs to occur in the context of social and economic equity. It is impossible to create a meaningful transition without coalitions and groups to support it. However, little reliable information is available on the precise nature of these issues and society-wide impacts beyond the immediate confines of the energy sector—for example, the impacts of clean energy transition on general wage levels, cost of living, inequality, employment, and trade within ASEAN and beyond. **Action:** Consider initiating a study to develop some reliable estimates of such issues and impacts and determine where the real barriers are, how to overcome these barriers, and how to identify socially acceptable and financially viable propositions.

Clean energy supply chain in Southeast Asia: The need for clean energy technologies for the transition is massive. Solar, wind, and biomass are the keys for the transition to be successful and for energy storage. Where is the technology actually produced? That is mainly in China, which produces 90% of global solar production. Each ASEAN member country has set a large amount of solar needed to make the energy transition happen, while the manufacturing capacity in ASEAN member countries is actually quite low. This creates an issue as well as tension. We have to address helping ASEAN member countries develop their clean energy supply chain in cooperation with China and others, at the same time as we address financial cooperation to help ASEAN countries accelerate their energy transition. Considering the legitimate industrial manufacturing needs of Southeast Asia, as well as the current industrial capacity of China, how do we navigate so that everyone gets to win, in terms of employment, industrial growth, and the environmental outcome?

If China expands the manufacturing supply chains into ASEAN, and especially into Indonesia, helping to absorb surplus labor from the fossil fuel-fired power generation that will sunset, as well as being more involved in the renewable energy sector in Indonesia, this would give China a much stronger voice and a much stronger opportunity to influence policy and reform in Indonesia that will make the sector readier for a pipeline of projects and financing at scale.

Coordination between China and MDBs: Multilateral development banks (MDBs), such as the Asian Development Bank (ADB) and the World Bank, have little money, but they do have a big role in policy advice and influencing governments. On the other hand, their Chinese counterparts come

with quite a lot of money, but they seldom make contributions on policy issues and have little influence. On one side of the equation, then, is the amount of expertise of the MDBs, the World Bank, and the regional development banks and their lack of investable capital; on the other side of the equation are the Asia Infrastructure Investment Bank (AIIB), the Belt and Road Initiative (BRI), and other financial institutions proceeding on an almost separate policy framework, with the two worlds unmatched on the critical question of climate. MDBs and the G7 do coordinate; however, China and MDBs do not. Yet China is a big player because of its manufacturing capacity. China has to be specific on what it wants and what it can contribute. **Action:** Consider how high-level committee members could fill this gap between China and MDBs including ADB and AIIB, in a way that brings about a dialogue between players on investment, trade, social issues, and so on.

Higher-level cooperation between ASEAN and China: Action: Consider how the high-level committee can advocate for cooperation between ASEAN and China to elevate the energy sector to higher levels. Various activities and programs now exist between ASEAN and China, for example, under the framework of ASEAN Plus Three. Although many collaborations have been conducted, progress has been limited so far.

Carbon market cooperation: We need to take advantage of China's carbon market, already the largest in existence, and facilitate mutual trade with ASEAN countries, several of which are developing their own carbon markets, notably Indonesia, which is just beginning its mandatory emissions trading system (ETS) for the power sector.

Other sectors: We need to consider green finance that goes beyond energy but also targets specific goods, such as cement and steel. It is important to look not only at the power sector but also at industry and transport, which will require more financing for decarbonization.

Overview of investment needs for Southeast Asia to achieve an ambitious clean energy transition by 2030

Approximately US\$500 billion would be needed in the ASEAN region in the years up to 2030 to build more clean power capacity, expand cross-border interconnections and the national grid, and build more storage capacity for a 1.5°C-aligned transition pathway, according to the Renewable Energy Outlook for ASEAN by the International Renewable Energy Agency (IRENA) in 2022. This is approximately US\$40 billion a year.

In comparison, annual renewable investment in the region has ranged from less than US\$3 billion in 2006 to approximately US\$7 billion in 2018. In 2020, the figure was approximately US\$10 billion. This is much less than what is required by the IRENA numbers.

Around half of the renewable investment in the region from 2016 to 2020 came from public sources, including publicly owned financial institutions and state-owned companies. To support more ambitious transition pathways, private capital will need to play a much bigger role in the future.

Clean energy investment needs and solutions—perspectives from the Philippines

The excessive dependence of the Philippines on fossil fuels has produced an unreliable and insecure power sector and high electricity rates—the highest in ASEAN.

It is time to promote activities that can deliver a full-scale embrace of renewable energy to reduce the economic and financial impact of fossil generation. We need to accelerate the transition to affordable, reliable, secure, and resilient energy systems instead of investing in retrofitting existing coal plants and constructing additional baseload power. The sector should focus on leveraging the country's massively abundant renewable energy sources.

Renewables are the key to the country's modernization. They are central to realizing the development ambitions of with considerable contributions to global climate action coming not as a driver but as a co-benefit. Work by the Institute for Climate and Sustainable Cities (ICSC) shows decarbonization will be achieved far faster when development goals are the driver. Evidence shows that renewable energy has significantly reduced the settlement price of electricity by 28% during peak hours, even

when renewables represented less than 3% of the energy mix. What we need is greater access to green finance; with the country already accepting 100% foreign equity in renewable energy, China can and must play a lead role to help complete the Philippines' energy transition far sooner.

China can help strengthen the country's fully liberalized energy sector by encouraging private Chinese companies to invest in new renewable energy and storage capacity. Chinese banks' regulatory experience should also build capacity, particularly in the Philippine banking sector, by showing the way renewables can be harnessed to drive up profits, so that they can tap the far greater business potential of renewables.

What are the additional investment needs in Southeast Asia for an ambitious clean energy transition?

Technologies: Needed investment includes solar PV, offshore wind, smart grids, hydro, cross-border interconnections, carbon capture and storage (CCS), and others.

Phaseout of coal-fired power generation: Coal-fired power generation has greatly expanded in the ASEAN region, creating an oversupply problem that limits the expansion of renewables. The ASEAN region is home to some of the most recently built coal power plants in the world, with an average age of the coal fleet of around 12 years. Partial or complete sundown will be a financial challenge to the plant owner and investor, with utility companies having signed construction and operation contracts. Older coal plant retirements are seen as a quick win in Indonesia where it will require around 8 GW to 9 GW from now until 2030 for the retirement, with some kind of concessional finance needed. A large amount of funding will be needed, but where will this investment and finance come from? China financed almost 50% of Indonesia's coal power fleets over the past few decades. China Export-Import Bank and the China Development Bank played a large role in providing concessional finance to these projects. Under the Just Energy Transition Partnership (JET-P) program, for instance, Japan will try to push its own financing or concessional finance to bail out its investment in coal power plants in foreign countries. Will China do the same? Will China have any plan to provide concessional finance not only for the green sector but also to help retire its investment in these ASEAN countries?

The Asia-Pacific (APAC) Network of the Glasgow Financial Alliance for Net Zero (GFANZ) has a work stream that aims to provide financial institutions with guidance on how to finance phaseout (early retirement) of coal power generation in the Asia Pacific. This will consider what a good managed phaseout is, the available mechanisms to make it financially viable (e.g., financial engineering, blended finance, and carbon markets), and the assurance that the managed phaseout is a just transition. Support comes from the Asian Development Bank, which has done quite a lot of thinking already around its Energy Transition Mechanism (ETM).

Coal-fired power generation retrofits: These coal power stations can be retrofitted to co-fire renewables; those that are to remain in operation in Indonesia until 2050 can be retrofitted to be more flexible to couple with renewables. This can be a quick win.

Accelerating manufacture of floating solar: A number of countries have low solar potential because of the unavailability of land; therefore, marine renewables, particularly solar on water, floating solar, and solar on stilts have emerged as a solution to scale up solar power generation in these countries, including Singapore, Malaysia, Vietnam, the Philippines, and possibly Indonesia. The logistics of deploying floaters in countries are expensive. Accelerating the manufacturing of this component will reduce its costs and accelerate the deployment of more solar power generation in countries that have limited available land.

Strengthening grids: Investment for strengthening grids is crucial for increasing renewable energy. Transmission must be able to manage and withstand the fluctuation of renewable electricity. Without this upgrade to the system, grid congestion and curtailment could happen, causing both blackouts and economic losses. For example, achieving the ambitious clean energy target in the Philippines will depend on the availability of the grid and its capacity to absorb whatever renewable electricity is deployed into the network. In the Philippines, China is a major player in the National Grid

Corporation, owing 40%. This can be leveraged so that China can increase its investments in grid improvement, modernization, and expansion, allowing more renewables into the system.

Interconnection of countries in Southeast Asia: Many ASEAN countries have an oversupply of electricity (e.g., hydro), and connections across countries will be an important solution moving forward. Surplus renewables generation can be shared with the other countries. Connecting ASEAN countries or having one grid in ASEAN needs close coordination with China, because it requires massive investments and long-term planning. The ASEAN power grid is one of the advanced initiatives to integrate renewables. In UNESCAP, 53 member countries, not only from ASEAN, adopted a roadmap focused on the ASEAN power grid system connectivity and integration of renewables. This kind of mechanism can provide a framework to guide private sector investment.

Energy access: China has done quite well for universal energy access, but for Southeast Asia this is a great challenge. It is a potential area that China can support or work together with members of ASEAN to promote energy access, particularly for island residents and remote areas who need electricity and clean cooking energy.

Investment needs: The Institute for Essential Services Reform (IESR) has calculated that decarbonizing Indonesia's energy system by 2050 will require around US\$1.3 trillion for the energy sub-sector. And, until 2030, which is seen as critical to create momentum and reach the emissions peak of the energy sector, it will require US\$240 billion. This is for the infrastructure for building more renewables capacity, energy storage, transmission, and so on.

Overview of the BRI as a key channel for providing Chinese finance and investment for clean energy transition in Southeast Asia

The green BRI development guideline from April 2022 clearly stipulated that not only would China stop building coal-fired power plants overseas but that it would also carefully manage those in construction, as well as those completed. China has made the commitment to make green development the bottom line.

When we talk about investment in energy systems, we should bear in mind that this cannot be totally separated from the overall investment that is happening between China and many other countries.

Solar power production capacity in Southeast Asia has surged, with Chinese solar producers active in the region.

The BRI International Green Coalition has been working with partners on a set of principles, named the Green Investment Principles for the BRI. Twenty-seven global financial institutions have signed on.

Global financial institution reform: In relation to climate finance, the top-level reform is that of global financial institutions—the so-called Bridgetown Initiative. As well as working with some of the regional MDBs, mentioned above, China should actively participate in global financial institution reform.

JET-P: China is closely watching JET-P countries and activities, partly because the United States is encouraging JET-Ps through the APEC platform. This is clearly something that China needs to consider.

Carbon market: A recent study presents an assessment of the readiness of carbon markets in various world regions and makes predictions about capital flows. If regional markets are developed, we can think of China and ASEAN countries under the guidance of Article 6 of the Paris Agreement.

What finance mechanisms will be required to provide this investment?

Bankable projects: Existing sources of finance for clean energy are abundant. What is lacking in ASEAN countries is bankable projects. What is difficult is matching the available finance for clean energy and the risk appetite for the potential projects. There is a mismatch between the financiers' appetite and the projects that are available on the ground, especially the smaller projects.

In terms of adding renewable energy capacity at scale, the primary barrier in Indonesia is taking the dollars, rupees, or another currency and converting it into plants and machinery on the ground that are supplying clean energy to the grid. The lack of a sufficient volume of shovel-ready projects to absorb the financing available is one of the key challenges. Furthermore, obstacles to achieving adequate financial flows are the typical power purchase agreements (PPAs) that are used and the risk allocation. There is a move to produce a more balanced green renewable PPA that could be available toward the end of the year.

EPC+F financing model: Lower finance costs and higher finance amounts can be tied with the Engineering Procurement Construction plus Financing model (EPC+F model) involving Chinese original equipment manufacturers (OEMs) with support from China's Export-Import Bank or other institutional structures. This could be quickly implemented. The EPC+F model could be used to finance retrofitting coal-fired power stations with renewables, for example, the captive power capacity (18 GW to 19 GW) in Indonesia. This financing model can also be used for strengthening the grid as well as deploying grid-scale storage.

Predevelopment financing: It was mentioned that financing is not an issue, but having bankable and viable projects in the pipeline is the real barrier in getting closer to the transition. This presents an opportunity to coordinate with China more closely, as most projects need predevelopment financing (for property acquisition, studies, modeling, pilot projects, etc.). These predevelopment expenses make projects more bankable and decrease risk. But getting more projects into the pipeline and having more projects for deployment will be a function of the predevelopment activities, and these must be developed and explored with China's cooperation.

Institutional investors: One of the biggest sources of relatively underutilized capital comes from institutional investors. They are a clear match for energy transition: in many cases, these investors have made net zero commitments for their portfolios, and they have a lot of long-term capital that is aligned with climate finance. What is missing in Southeast Asia in terms of attracting finance is the lack of understanding of the type of instruments that institutional investors prefer, for example, sovereign green bonds. This lack of understanding of institutional investors' requirements is preventing the infusion of private capital. Such investors consider how these economies will function in long term. Therefore, issues such as physical risks, building resilience, and national adaptation plans become important. The discussions on these topics are generally not transparent enough for investors to understand what the risks are. Once this gap is met, the flow of private capital (internationally and from China) to meet the energy requirements of Southeast Asia will become much easier. These are key issues that the Asia Investor Group on Climate Change (AIGCC) is working on, including starting a program this year to focus extensively on domestic Chinese investors.

Capital markets: If China is able to cooperate in this area with its large capital base, then this particular financing mechanism can provide solutions in funding what is necessary for countries to achieve their ambitious targets.

Facilitating private investments: The BRI can bring private sector investment from China into the region, but Chinese private sector representatives often do not know how to do so. Southeast Asian governments can play a role in building a platform to meet investment demands. Differences in many systems and standards across countries pose a major barrier for private investors to engage in cross-country investment. Some kind of standardized approach or institutional support would allow private participants to engage in cross-border investment and cross-border merger & acquisition sectors, which will be important.

Support from MDBs: While MDBs have relatively little money, they can support the extra cost of green technologies. Where there is a viability gap, MDB money or public money should be used, not to cover the full cost of green technology but only the part related to its additional cost. If that is done, MDB money would still be meaningful and would support development of new technologies.

Big tech companies: Big tech investors are not investing in ordinary technologies; they are exploring new technologies. Last year, Tesla's Elon Musk launched an XPrize Initiative with US\$100 million to

support carbon capture and storage technologies. Another example is Tencent and its investment in nuclear fusion. We should not forget the role to be played or being played by big tech in nurturing and promoting new technologies that are still at very early stage of development, which even MDBs and commercial banks would not touch.

International mechanisms: Several international mechanisms were mentioned—international organizations have put out many platforms. How can we consider these, create synergies, and elaborate about them to show private companies how to get involved in these investments? This will help set up a win-win situation for these private companies.

Blended finance: It is estimated that blended finance could potentially contribute up to 40% of Asia's overall need of US\$400 billion per year for financing low-carbon assets.

Concluding remarks

Considering what has been said about energy access, any transition should put people first.

The money will eventually come from domestic sources, from the countries' own private sectors.

The focus should be on China's *investment* in energy transition, not its financial *support*. China is lending because the project makes sense.

There is not enough coordination among China, the traditional donor countries, and MDBs. Countries in Southeast Asia and other parts of the world can benefit if these sources of funding talk among themselves and coordinate on an issue. No finance, no transition was mentioned earlier, but with no coordination there will be no just and quick transition.

One issue that we must explore further is the reason for this cooperation. First, we would like to save the planet from climate change disaster; therefore, we would like to accelerate an energy transition in the region. Second, by doing so, we would like to increase prosperity, that is, economic benefits for both China and the region. We should explore more and question how we can achieve those objectives.

Regarding cooperation, we should be clear about what are China's interests and what are ASEAN's interests. Each country will have its own interests based on its level of development, although all would like to pursue energy security, industrial competitiveness, and just transitions. We should continue to explore this.

Finally, finding demonstration projects based on existing initiatives in Southeast Asia and China will be valuable and can be expanded further.