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ENABLING PRIVATE SECTOR CLEAN ENERGY INVESTMENT IN SOUTHEAST AND SOUTH ASIA

CEADIR

WORKSHOP REPORT

MARCH 27 – 28, 2017
BANGKOK, THAILAND

May 30, 2017

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National Renewable Energy Laboratory
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ACRONYMS AND ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
BKPM	Investment Coordinating Board of the Republic of Indonesia
CDKN	Climate and Development Knowledge Network
CE	Clean energy
CEADIR	Climate Economic Analysis for Development, Investment and Resilience
CEIA	Clean Energy Investment Accelerator
CESC	Clean Energy Solutions Center
CPI	Climate Policy Initiative
DEDE	Department of Alternative Energy Development and Efficiency (Thailand)
DOE/P	Department of Energy (Philippines)
DPV	Distributed photovoltaic
EE	Energy efficiency
EPPO	Energy Policy and Planning Office (Thailand)
ERAV	Energy Regulatory Authority of Vietnam
FIT	Feed-in-tariff
GHG	Greenhouse gas
LEDS	Low emission development strategies
MEMR	Ministry of Energy and Mineral Resources (Indonesia)
NDCs	Nationally determined contributions
NREB	National Renewable Energy Board (Philippines)
NREL	National Renewable Energy Laboratory (United States)
OPIC	Overseas Private Investment Corporation (United States)
PFAN-Asia	Private Finance Advisory Network–Asia
PLN	State Electricity Company (Indonesia)
PPA	Power purchase agreement
PPP	Public private partnership
PV	Photovoltaic
RE	Renewable energy
REBA	Renewable Energy Buyers Alliance
REC	Renewable energy certificate
RPS	Renewable portfolio standard
SME	Small and medium-sized enterprise

USAID	United States Agency for International Development
USG	United States Government
WRI	World Resources Institute

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EXECUTIVE SUMMARY

On March 27-28, 2017, 87 leading private sector and government representatives attended a regional workshop on "Enabling Private Sector Clean Energy Investment in Southeast and South Asia" in Bangkok, Thailand, to discuss near-term opportunities to scale up clean energy (CE) investment in the region. At the meeting, corporate leaders showcased their companies' commitments to CE, globally and in the Asia region, that are building momentum for a CE economy. Participants also engaged in peer learning on emerging strategies to implement large-scale CE development and procurement in Asia. Executives from leading Asian, American, and European corporations and government officials from India, Indonesia, the Philippines, Vietnam, and the United States participated in the workshop.

Key Takeaways – Top Six Results and Findings

1. **Increased public-private sector engagement is essential in order to achieve country targets and corporate goals for clean energy investment and development.**

This workshop was the first regional forum convened to allow top private sector leaders and government officials to discuss what country climate change commitments, or Nationally Determined Contributions (NDCs), mean for the private sector in Southeast and South Asia. NDCs aim to provide clear, ambitious goals for climate change mitigation actions and greenhouse gas (GHG) emission reductions that lead to transformation in carbon-intensive sectors, including in the energy sector.

Private sector leaders in the region have embraced the business case for CE and are seeking opportunities to increase their investment. The NDCs of India, Indonesia, the Philippines, and Vietnam prioritize actions to expand renewable energy (RE) and energy efficiency (EE) and create new investment opportunities for CE development. In these four emerging markets, the total climate-smart investment potential for the energy, transport, and waste sectors is estimated at more than $3.2 trillion by 2030.[1] To enable private sector investment at scale and to help countries achieve their climate change commitments related to CE, it is essential that public and private sector stakeholders align priorities and actions.

2. **Private sector leaders are increasing their investments in clean energy and are committed to investing at scale.**

Across the region, leading multinational corporations, domestic companies, global and regional banks, investment firms, small and medium-sized enterprises (SMEs), project developers, and service providers are increasing their investments and financing for CE solutions and are committed to investing at scale. Figure ES-1 highlights the top private sector actions and commitments that participants highlighted at the workshop.

[1] International Finance Corporation, Climate Investment Opportunities in Emerging Markets, November 2016, http://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/new+ifc+report+points+to+%2423+trillion+of+climate-smart+investment+opportunities+in+emerging+markets+by+2030.

Figure ES-1: Leading Private Sector Commitments and Actions to Increase Clean Energy Investment

AyalaLand	**Ayala Land Inc**., the Philippines' leading developer of sustainable estates, announced in February 2017 its goal to be carbon neutral – to achieve a net-zero carbon footprint – by 2022. The company plans to reduce GHG emissions in its commercial properties through a range of strategic initiatives including passive cooling design, EE, RE sourcing, and carbon offset mechanisms such as forest regeneration and protection.
AMATA	**AMATA Corporation Public Company Limited** is the leading developer of industrial cities in Thailand and Vietnam. AMATA Corporation has an "all win" business philosophy to achieve business objectives while contributing to sustainable societal development. The company prioritizes creating a sustainable environment to ensure the availability of energy, water, and other natural resources for business operations and growth, benefitting the business, its employees, and surrounding communities.
Mahindra	**Mahindra & Mahindra**, the world's largest tractor manufacturer and the top tractor maker in India, is making the business case for RE and EE investments and creating internal incentives to increase CE deployment. The company developed a metric (GHG emissions divided by payback period) to rank and approve corporate projects as funds became available – resulting in a ten-fold increase in the company's funding of CE and environment-focused projects in recent years.
VBF VIETNAM BUSINESS FORUM	In October 2016 the **Vietnam Business Forum**, which is comprised of leading Vietnamese and multinational companies, delivered the "Made in Vietnam Energy Plan" to government officials. With a unified voice, the Plan recommends key policy and regulatory changes in order to enable private sector CE investment at scale. As a result of the workshop, private sector leaders in Indonesia, the Philippines, and Thailand are now considering taking a similar approach.
RE 100	Ninety three companies have joined **RE100**, committing to match 100 percent of the electricity used across their global operations with electricity produced from renewable sources, either sourced from the market or self-produced. Many of these companies have significant operations in Southeast and South Asia.
REBA	Through the **Renewable Energy Buyers Alliance** (REBA), these large corporate buyers developed principles to tell utilities and other energy suppliers what they are looking for when buying RE from the grid, to help them meet their ambitious corporate purchasing goals.

These commitments and approaches are important and catalytic. Their impact will be to significantly reduce the GHG emissions of these leading corporations in the region, both within their operations and in their supply chains. They also provide models for replication by other companies that are looking to achieve business objectives while contributing to sustainable development, such as through adopting the methodologies that these leading corporations are using to achieve their goals.

Private sector leaders at the workshop also shared insights on the internal processes they used to develop their CE goals and implement their initiatives. These examples of strong organizational leadership and peer exchange on successful strategies offered high-value know-how to fellow participants with corporate RE goals and their factory supply chain partners in the region, motivating similar actions by other companies in the region.

3. Government action is necessary to enable private sector investment at scale.

In each country, governments must take specific actions to enable private sector investment in ways that align with NDC targets and other social and economic development goals. Government officials responsible for NDCs are inviting direction from the private sector on what is needed to increase private sector CE investment in their countries.

Through discussion and peer sharing at the workshop, companies operating in Asia developed country-specific recommendations on how governments can help accelerate the deployment of private sector investments for CE solutions, including through policy, finance, and collaboration. Companies conveyed recommendations to government officials in a collective voice, as highlighted in Figure ES-2.

Figure ES-2: How Governments Can Help Accelerate Private Sector Clean Energy Investment and Development

Improve the Policy and Regulatory Environment	Strengthen the Finance Ecosystem	Enhance Government Capacity and Public-Private Collaboration
• Review and revise existing policies and regulations that conflict with RE development goals or which create market uncertainties. • Institute new policies and incentives that provide clear direction and support the business case for RE investment. • Prepare actionable plans, with clear RE targets. • Improve electricity price forecasting and allow cost-reflective tariffs that enable RE to compete.	• Develop the capacity of domestic commercial banks to increase CE lending and obtain additional capital. • Help domestic CE project developers to access finance.	• Improve public sector capacity at the national and subnational levels to support RE markets. • Increase government engagement with various private sector stakeholders to understand their needs and priorities. • Collaborate with the private sector on strategic pilot or demonstration investments where needed.

4. Private sector capital will move into those markets with strong enabling environments for clean energy investment.

By highlighting the investment needs, challenges, and opportunities *at a regional level*, the workshop demonstrated that private sector CE investments will move into those markets that best enable it. During the workshop, private sector and government leaders identified the top policy and regulatory actions needed at a regional and country level to enable and accelerate private sector investment (see text box).

Top Policy Actions to Enable Private Sector Clean Energy Investment

- Pursue electricity sector reform in highly regulated markets to provide flexibility and options to corporate off-takers interested in purchasing clean energy (assets or attributes), including adopting net metering
- Establish cost-reflective tariff rates to ensure that RE investments are economically viable
- Incorporate co-benefits into energy policy decision-making, considering benefits and costs associated with green jobs, energy security, health, and other key sectors

If these policies are pursued, the impacts would include:

- More CE projects planned, financed, and built
- A greater diversity of CE project developers entering the market
- A greater diversity of energy off-takers
- More private sector investment in CE, helping to achieve both corporate and country NDC targets
- A greater diversity of energy sources in the market, helping to increase energy security and resilience
- Co-benefits including job creation and protecting public health and other key economic sectors, such as tourism industries

5. Open dialogue between private and public sector leaders resulted in new relationships and action-oriented collaborations.

The workshop featured structured sessions on enabling environment needs at the regional level, facilitated working groups to address country-specific issues, and included informal networking. These opportunities for open dialogue helped to bridge the gap in communication between public and private sector stakeholders, and resulted in a greater common understanding of challenges and priorities between the two sectors and new relationships between motivated leaders. In this neutral forum, public and private sector leaders recommended specific joint action items in the coming year to enable private sector CE investment at scale. Figure ES-3 highlights some of these recommended joint actions.

Figure ES-3: How Public and Private Sector Stakeholders Can Collaborate in the Coming Year to Accelerate Clean Energy Investment

India

- **Establish RE as a priority lending sector** to increase lending to large- and small-scale RE investments. Key partners include the Ministry of New and Renewable Energy, Ministry of Finance, Reserve Bank of India, and private sector leaders. Collaborate on development of a white paper on national policies and regulations needed to motivate investment in renewable electric power generation capacity, facilitate dialogue, and outline a roadmap; establish RE lending as a priority and create a policy on RE lending terms and insurance requirements; and develop guidelines for and help development banks, commercial banks, and the insurance industry to increase their capacity to support RE.

Indonesia

- **Launch a larger-scale CE demonstration project at an industrial park**. The Investment Coordinating Board of the Republic of Indonesia (BKPM) volunteered to promote the opportunity for a business-to-business exchange between Thailand's AMATA Corporation and an industrial park in Indonesia. The pilot could use an integrated planning approach that includes RE, EE, and other aspects of industrial sustainability.
- **Develop a platform to obtain business perspectives** on legal, financial, and institutional frameworks for RE policy and identify key barriers. Key partners include the Indonesia Chamber of Commerce, Directorate General of New and Renewable Energy & Energy Conservation under the Ministry of Energy and Mineral Resources, Indonesia State Electricity Company, BKPM, and others.

Philippines

- **Implement the Renewable Portfolio Standard (RPS).** The National Renewable Energy Board (NREB) will conduct a benchmarking study to review RPS experiences in other countries, as a preliminary step in implementing the RPS. NREB will then develop a proposal on the RPS for review by the Department of Energy Philippines (DOE/P). DOE/P is expected to issue a Department Circular on the finalized rule, possibly by mid-2017.
- **Pursue a net metering program.** NREB will develop a net metering proposal for review by DOE/P. DOE/P and the Electricity Regulatory Commission will review, revise, and approve the proposal, possibly by late-2017.

Thailand

- **Establish a net metering policy**. Private sector stakeholders and development partners can engage the Distributed Photovoltaic (DPV) Working Group and Department of Alternative Energy Development and Efficiency of the Ministry of Energy to identify potential regulatory changes and assess the impacts of PV expansion and net metering. The DPV Working Group could develop a pilot DPV project and analyze financial impacts on ratepayers and utilities; conduct a study of grid capacity and the implications of DPV energy and determine areas eligible to participate; and propose a net metering policy to the National Energy Policy Council for approval.

Vietnam

- **Implement a pilot a direct power purchase agreement (PPA) to demonstrate proof of concept.** The Energy Regulatory Authority of Vietnam (ERAV) can establish a new legal mechanism for PPAs, and propose this to the Ministry of Industry and Trade and Prime Minister's Office for political support. Identify potential private sector partners for the pilot, such as Saigon High Tech Park, the Vietnam Business Forum, and large multinational corporations (including RE100 companies). Partners could collaborate with ERAV to develop a direct PPA that is bankable and encourage RE investment in municipalities that have adopted these new mechanisms. Ensure national and subnational coordination and budgets to support replication of these new mechanisms to other municipalities.

In addition, the **regional peer sharing and learning** that occurred – between top corporate executives working to increase their investments and top government officials working to enable it – was invaluable in exchanging perspectives and reinforcing the urgency of collaborative action to achieve both corporate and country goals.

6. USAID is serving as an effective and needed neutral convener of the private and public sectors to help facilitate a clean energy transformation.

In convening the workshop, the United States Agency for International Development (USAID) provided a neutral forum for private and public sector leaders to discuss priority needs and opportunities, share emerging strategies and good practices, and develop new working relationships. USAID is serving as an effective neutral convener at both the regional and national levels in Southeast and South Asia, through multiple ongoing activities, including USAID Clean Power Asia, USAID Private Financing Advisory Network-Asia (PFAN-Asia), USAID Low Emissions Asian Development program (recently completed), and national-level CE programs and activities.

Discussions at the workshop built upon recent and ongoing discussions that USAID is facilitating with private and public sector stakeholders through these CE programs. Outputs from the workshop will be utilized by USAID, other U.S. Government (USG) agencies, and organizing partners in continuing to support public and private sector leaders in the region to take actions that incentivize CE investment at scale.

The workshop was hosted by USAID Asia through the Climate Economic Analysis for Development, Investment and Resilience (CEADIR) Activity, funded by the USAID/Washington Bureau for Economic Growth, Education, and Environment's Office of Global Climate Change. It was co-hosted by the Asia Low Emission Development Strategies (LEDS) Partnership. Additional support was provided by USAID-funded Clean Power Asia, USAID-funded PFAN-Asia, Climate and Development Knowledge Network (CDKN), National Renewable Energy Laboratory of the United States (NREL), World Resources Institute (WRI), and Allotrope Partners.

This workshop report will be made available on the USAID Development Experience Clearinghouse at https://dec.usaid.gov/dec/home/Default.aspx.

1. WORKSHOP OVERVIEW

The Southeast and South Asia regions generate more than 29 percent of greenhouse gas (GHG) emissions in Asia and more than 15 percent of global emissions.[2] Governments in the region are working to meet increasing energy demands while reducing GHG emissions and air pollution. At the same time, a growing number of corporations have recognized the business case for clean energy (CE). Ninety three global companies have joined RE100, an initiative that assists corporations in developing CE commitments, pledging to procure 100 percent of their electricity from renewable sources of energy in the coming years.[3] However, these companies face significant economic, structural, and social challenges to achieving these goals in Asia.

The regional workshop on **Enabling Private Sector Clean Energy Investment in Southeast and South Asia** was held on March 27-28, 2017. It brought together 87 executives from leading Asian, American, and European corporations; government officials from India, Indonesia, the Philippines, Vietnam, and the United States; and donors and development partners to discuss strategies and near-term opportunities to increase corporate commitments for large-scale CE development in the region. Participants from 12 countries shared experiences, recommendations, and lessons learned for accelerating CE investment in Asia.[4]

The two-day workshop showcased government and corporate commitments to increase CE investment and successful examples of large-scale renewable energy (RE) procurement and energy efficiency (EE) improvements in corporate supply chains. It also facilitated peer learning on strategies for achieving commitments in emerging Asian markets to promote replication and the scaling up of private and public sector actions. Finally, it explored country-specific barriers inhibiting CE development and recommended policy actions to increase incentives for private investment.

The first half-day focused on sharing success stories and commitments of private and public sector leaders. The remainder of the event featured in-depth discussions on achieving these commitments through private-public sector country working groups and interactive peer learning and exchange.

The workshop was organized by the United States Agency for International Development (USAID)-funded Climate Economic Analysis for Development, Investment and Resilience (CEADIR) Activity. It was hosted by USAID Asia with financial support from the USAID/Washington Global Climate Change Office and co-hosted by the Asia Low Emission Development Strategies (LEDS) Partnership. The workshop benefited from additional support from USAID-funded Private Financing Advisory Network-Asia (PFAN-Asia), USAID-funded Clean Power Asia, Climate and Development Knowledge Network (CDKN), National Renewable Energy Laboratory of the United States (NREL), World Resources Institute (WRI), and Allotrope Partners.

This workshop leverages ongoing activities of USAID in Asia and builds on the work of USAID CE programs with public and private sector stakeholders, including through regional initiatives such as USAID Clean Power Asia, USAID Low Emissions Asian Development Program (recently completed), USAID PFAN-Asia, and through country-tailored CE assistance by USAID and other U.S. Government (USG) agencies.

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[2] Emissions estimates were obtained from the CAIT Climate Data Explorer (2013): http://www.wri.org/resources/data-sets/cait-country-greenhouse-gas-emissions-data. Southeast Asian countries included in the estimate are: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam; South Asian countries included are: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

[3] More information about RE100: www.there100.org

[4] The twelve countries included Australia, Cambodia, Denmark, India, Indonesia, Pakistan, the Philippines, Singapore, Thailand, United Kingdom, United States, and Vietnam.

2. DAY ONE

2.1 WELCOME

Glyn T. Davies (U.S. Ambassador to the Kingdom of Thailand) welcomed participants and challenged them to take full advantage of rapidly emerging opportunities for clean energy. He noted that now is the time to gain higher ground in this new industry and scale up investments.

Glyn T. Davies, U.S. Ambassador to the Kingdom of Thailand

Vikrom Kromadit (Founder and Chief Executive Officer, AMATA Corporation Public Company Limited) delivered the keynote address. Mr. Kromadit inspired the audience by highlighting AMATA Corporation's "all-win" business philosophy, which includes achieving business objectives while contributing to sustainable development of the country and society. The company's all-win approach ensures sustainability of energy, water, and other natural resources for business operations and growth, benefitting the business, its employees, and surrounding communities (see text box).

Private Sector Leadership for a Clean Energy Economy

Starting with a 192-hectare industrial estate in 1989, AMATA Corporation now owns over 21,000 hectares in four industrial cities and plans to expand to 40,000 hectares. To manage its increasing footprint, AMATA Corporation is moving to a comprehensive "smart city" approach that includes smart energy (rooftop solar, waste-to-energy, grid management), smart manufacturing, smart mobility, smart community (city planning, green corridor, dwellings), smart innovation (research and development incubation), and smart education (creating an "Edutown" to ensure the availability of needed human resources).

Vikrom Kromadit, AMATA Corporation Public Company Limited

2.2 ROLE OF CORPORATE PROCUREMENT AND INVESTMENT IN DRIVING A CLEAN ENERGY TRANSITION

Alex Perera (Deputy Director of the Global Energy Program, WRI), Anirban Ghosh (Chief Sustainability Officer of Mahindra Group, Mahindra & Mahindra Limited), Anna Gonzales (Sustainability and Planning Head, Ayala Land Inc.), and Peter du Pont (Senior Climate Change Advisor, USAID Asia) discussed how ambitious, near-term corporate commitments can drive a faster transition to a CE economy.

Leading Asian companies see a strong business case to adopt clean energy. Business drivers for CE include cost reductions that increase profits, faster growth of green businesses, improved relationships with employees and communities, and demonstrating concern for the planet. Decreasing prices are making RE technologies cost-competitive or even cheaper than conventional power sources.

Asian companies are successfully funding RE and EE with internal and external resources and are creating incentives to increase CE deployment. Ayala Land embedded sustainability metrics in performance evaluations and rewarded its property managers for energy savings. Mahindra & Mahindra used a ratio of GHG emissions to the payback period to rank 150 potential investments. The company's Chief Financial Officer used the rankings to approve investments as funds became available. This process led to a ten-fold increase in the company's CE and other environmental investments.

Companies recognized that governments have set aggressive goals for RE installed, but noted that policy changes may be needed to reach national targets. Companies can reduce GHG emissions by 1) reducing energy consumption through in-house measures or though energy performance contracting, 2) installing on-site RE, 3) procuring off-site RE power, and 4) purchasing renewable energy certificates (RECs), a market based instrument issued when one megawatt-hour of electricity is generated and delivered to the electricity grid from a RE resource. On-site RE is a key strategy to achieve targets, but scale-up is hindered in markets without policies to encourage net metering and self-generation.

Policy makers will need to consider tradeoffs in managing the transition to renewable energy. Policy makers should consider the implications of RE development on electric utility business models (including integration of intermittent RE in the grid, and the possibility of creating stranded generation and transmission and distribution assets). Policy makers should also take into account the costs and benefits of supporting grid-connected RE versus distributed energy in different locations to align with rural development goals.

Companies Taking Action

In 2017, Ayala Land, Inc., a commercial real estate company in the Philippines, announced a goal of achieving a zero net carbon footprint by 2022. The company plans to reduce GHG emissions from its commercial properties through passive cooling design, energy efficiency, renewable energy sourcing, and carbon offset payments for forest regeneration and protection.

Top: Moderator Alex Perera. Middle: Panelist Anna Gonzales, discussing the importance of corporate commitments. Bottom: Participants engaging in dialogue with panelists.

2.3 COUNTRY LEADERSHIP TO ENABLE PRIVATE SECTOR CLEAN ENERGY INVESTMENT

Soumya Chaturvedula (Coordinator, Asia LEDS Partnership) moderated a session on country leadership to enable private sector CE investment. Panelists included Shwetal Shah (Technical Advisor, Climate Change Department, Gujarat State, India), Farah Ratnadewi Indriani (Deputy Chairman for Investment Climate Development, Investment Coordinating Board, Indonesia), Atty. Jose M. Layug, Jr. (Chairperson, National Renewable Energy Board, Philippines), and Nguyen Thi Minh Hien (Deputy General Director, Ministry of Planning and Investment, Vietnam). The panel discussed targets for increasing CE and reducing GHG emissions in their countries as well as measures to support progress towards achieving targets (see Annex D).

Figure 1: Country Updates

India. As the second most populous country in the world, India recognizes that population growth, economic growth, and rising energy demand are intertwined. CE is core to national and state level energy strategies, as is increasing grid efficiency to reduce losses from transmission and distribution.

Indonesia. Indonesia aims to achieve 23 percent RE in the national energy mix for electricity and transportation by 2025. Government incentives and support for private sector RE investments include an infrastructure guarantee fund, one-stop service centers for licensing and permitting, and opening of borders to foreign investment.

Philippines. The Philippines seeks to increase the RE-based capacity of the country to an estimated 15,304 MW by 2030, almost triple its 2010 level. The government is moving away from using feed-in-tariffs and is working to adopt renewable portfolio standards. These standards will mandate that utilities and licensed electricity suppliers, include a specified share of RE in their supply mix.

Vietnam. Vietnam aims to achieve seven percent RE utilization for power generation by 2020, and 10 percent by 2030. Additional targets have been set, such as achieving 12 percent household adoption of solar water heaters by 2020 and 50 percent by 2050. The government plans to increase tax incentives for RE, possibly including import tax exemptions and a four-year corporate tax exemption followed by nine years at reduced tax rates.

CE offers benefits beyond GHG emission reductions and cost savings. The co-benefits of RE and EE, including the reduced health impacts from air pollution and the potential to reduce disaster risks and adaptation costs, are becoming a core part of decision-making processes, especially in vulnerable locations. In the Philippines, the Green Jobs Act provides training to farmers and incentives for companies to use agricultural byproducts to generate energy or additional income.

Improved coordination by the public sector is essential. Government ministries and parastatal or private electricity production and distribution companies should work together to set targets and to develop and implement power development plans.

Governments can encourage public-private partnerships. Public private partnerships (PPPs) can help scale up CE investment. The Vietnam Business Forum convened private sector stakeholders to prepare the Made in Vietnam Energy Plan and inform government policy incentives for increasing CE investment to help reach the goal of 70 percent private sector investment into Vietnam's energy sector through EE, RE, and offshore gas to power.[5]

2.4 OPPORTUNITIES AND CHALLENGES IN SCALING UP CLEAN ENERGY INVESTMENT IN ASIA

Investment flows are signaling a reorientation of the global energy market. In 2015, investment in fossil fuels fell by $200 billion, while investment in renewable energy, energy networks, and energy efficiency expanded.

Michael Waldron, Renewable Energy Markets Analyst at International Energy Agency

Top: Michael Waldron, International Energy Agency. Bottom: Lars Kvale, APX, Inc.

Rachel Posner Ross (Director of Partnerships for Energy Policy and Investment, Allotrope Partners) facilitated a session on opportunities and challenges. Panelists included Michael Waldron (Renewable Energy Markets Analyst, International Energy Agency) and Lars Kvale (Managing Director, APX, Inc.). Key points are discussed below.

Change is here. New energy technologies, new buyers, and new types of arrangements have entered the market, including those enabled by RECs and other regulatory requirements. The declining cost of technology has reshaped electricity business models by enabling more solar, wind, energy storage, and EE upgrades. However, prices for upstream oil and gas have also fallen, complicating CE cost-benefit trends. Rapid change has created uncertainty for investors, which can be rectified by governments providing heightened commitments and clarity on policies.

Governments can drive CE investments. Governments can increase private sector investment by offering long-term contracts and price signals, allowing electricity tariffs that recover costs, and providing access to low-cost capital.

Integrated policy approaches are required. Policies should go beyond RE generation and encourage flexibility in addressing rapid electricity demand growth and increasing RE integration. Governments should consider how policies, such as feed-in-tariffs (FITs), renewable portfolio standards (RPS), and reverse auctions can increase private sector participation in RE procurements. Governments should also consider how targets in nationally determined contributions (NDCs) can be met through policies that can help achieve additionality, or the reductions in GHG emissions that would not otherwise have occurred. On grid-scale battery storage, regulators should create opportunities to monetize capacity (i.e., assign value to the distribution of grid resources), ancillary services (i.e., those services that facilitate the continuous flow of electricity so that supply continually meets demand), and avoided grid costs.

Utilities and end user roles in driving RE markets. Utilities and corporations serve as off-takers through

[5] More information on the Made in Vietnam Energy Plan: http://auschamvn.org/wp-content/uploads/2016/10/Made-in-Vietnam-Energy-Plan-MVEP-v12.pdf

long-term contracts and participation in wholesale markets. RE can reduce utility costs in increasing capacity in electricity generation and distribution, and may help utilities to obtain premium prices for greener electricity mixes from environmentally-aware customers. RE can also reduce electricity costs for corporations buying from power companies or generating their own supplies, help meet the growing consumer demand for more sustainable products, and help corporations demonstrate additionality in GHG emission reductions for RECs tracking and monitoring, reporting, and verification programs.

2.5 BREAKOUT GROUP ASSESSMENTS IN KEY MARKETS

Private and public sector participants worked in country-specific breakout groups to identify needed actions to enable the private sector and governments to overcome policy, market, and financing barriers to scaling up CE deployment. Table 1 summarizes key actions for Cambodia, India, Indonesia, Myanmar, the Philippines, Thailand, and Vietnam.

Table 1: Country-Specific Actions to Address Barriers to Increasing Private Sector Investment in Clean Energy

Actions to Overcome Policy, Market, and Financing Barriers
Cambodia
• Develop realistic, evidence-based RE targets • Review the legal and regulatory structure to legalize and de-risk RE investments • Move toward net metering
India
• Compile good practices on how to design policy incentives (especially feed-in-tariffs) with sunset clauses to provide certainty and reduce gaming of the system; engage five to six states in implementing these guidelines • Create win-win models to help utilities offer RE, such as instituting green tariffs and rationalizing subsidy surcharges to the utility and customer for RE • Enforce penalties for noncompliance with RE purchase requirements • Make RE a priority lending sector, beyond electric power • Raise the floor price for RE contracts to ensure bankability and help attract finance • Mandate RE procurement for new buildings, in order to receive building operating licenses
Indonesia
• Establish a buyers alliance of domestic and international RE purchasers and developers to provide input on the Ministry of Energy and Mineral Resources' policies and regulations • Relax restrictions on private investment and foreign ownership of RE investments • Support investments in RE demonstration at the state level, especially for solar energy • Work with the private sector to initiate new business models at the national level, especially for solar energy • Bundle small investments to access international funds • Create an agency to provide loan guarantees for RE investments • Provide technical assistance to banks and financial institutions on screening RE loan applications • Work with international companies and international finance institutions to increase the capacity of domestic developers to prepare high-quality technical and finance documents

Myanmar
• Develop a one- and five-year outlook for energy price forecasting • Adjust the tariff structure to account for cost-realism in the energy sector • Increase the capacity of domestic commercial banks in CE lending • Enhance the ease of doing business (e.g., streamline permitting for CE investments)
Philippines
• Finalize and implement the draft renewable portfolio standards • Ensure that there are clear policies on ownership and attribution of RE assets in contracts (i.e., who can claim the benefit of 1 MwH of RE generation) and clarify these rules for retail energy suppliers and offtakers • Institute net metering for installations larger than the current 100 kW cap • Launch a national information and education campaign on renewable energy certificates • Increase the ease of doing business via an electronic one-stop-shop for CE permits • Facilitate access to early-stage project preparation finance to address capital gaps for small CE project developers • Explore green tariffs for private consumers
Thailand
• Update the five-year RE plan annually for effectiveness • Develop a road map for how the government will implement policies to meet long-term targets • Convene private and public sector discussions on CE development priorities • Adopt net metering and link pricing to wholesale market prices that reflect decreasing costs of RE • Improve cross-agency coordination on the grid code
Vietnam
• Provide detailed information on the Power Sector Reform Roadmap and projected tariffs by year • Review the Electricity Law and move away from a strict single offtaker purchaser model, where Vietnam Electricity is the single offtaker • Provide better estimates of future electricity prices • Develop renewable portfolio standards • Develop and pilot a bankable direct power purchase agreement (i.e., an agreement between a RE generator and an end user in which RE-based power produced is physically delivered to power the buyer's operations) • Encourage corporations to make RE purchase commitments • Increase the capacity of the domestic banking sector to engage in CE lending • Create foreign direct investment opportunities that can attract large companies • Improve public-private sector dialogue and ensure meaningful engagement • Increase the capacity of government authorities in competitive energy procurements • Promote peer learning and state-to-state exchanges on good practices to increase CE investment

2.6 REFLECTIONS FROM DAY ONE

Marc Stuart (Founding Partner and Chief Executive Officer, Allotrope Partners) observed that a significant paradigm shift is taking place in electricity markets due to improvements in RE technologies. Previous assumptions have been disproven:

- A single interconnection point via a sanctioned monopoly is no longer the only business model.
- Electricity no longer needs to be consumed at the moment it is generated.
- Electricity does not always have the same value for different off-takers.
- The capital costs of RE are not fixed.
- Increasing scale is not the only way to reduce cost.

Stakeholders should work together to "build for the future." RE generation has made strong advances; the next step is addressing grid management and flexibility.

Ali T. Sheikh (Asia Director, CDKN) noted that the business case for RE is strong and becoming stronger. Strategies that work for enabling RE are becoming clearer across Southeast and South Asia, with significant opportunities for governments to adopt lessons learned from peers in the region in refining policies. Utilities have an essential role in the CE transition and will need to adapt and be forward-looking. In the coming decade, we may see more off-grid integrated energy systems and regional energy trade and transmission.

> *There is a massive paradigm shift happening in the energy sector. We are moving extremely fast on this track. To build policy frameworks that are flexible and suited to this context, we must think around the corners and leave outdated assumptions on the energy system behind.*
>
> Marc Stuart, Founding Partner and Chief Executive Officer at Allotrope Partners

Top: Marc Stuart, Allotrope Partners. Bottom: Ali T. Sheikh, CDKN.

3. DAY TWO

3.1 PEER-TO-PEER LEARNING IN THE PUBLIC SECTOR

Wathanyu Amatayakul (Energy Policy Expert, USAID Clean Power Asia), Matthew Ogonowski (Clean Energy Specialist, USAID Global Climate Change Office), and Jenny Heeter (Senior Energy Analyst, NREL) discussed incentives and policies that support CE investment.

Government leaders then formed country-specific working groups to develop plans for increasing private sector investment, building on the priorities identified the previous day. Table 2 summarizes the actions plans developed by government leaders from each of the countries.

Small-group discussions identified country-specific challenges, solutions, and next steps.

Table 2: Country-Specific Action Plans

Priority Actions	Plan for Operationalization
India	
Improve the enabling environment for RE, by establishing RE as a priorty lending sector to increase RE lending for large- and small-scale investments	• Involve key stakeholders early: Ministry of New and Renewable Energy, Ministry of Finance, Reserve Bank of India, Ministry of Environment, Forestry and Climate Change, Ministry of Rural Development, Ministry of Urban Development, Ministry of Planning, line departments at the national level, the National Institute for Transforming India, and state agencies . • Prepare a white paper on national policies and regulations needed to motivate investment in renewable electric power generation capacity, facilitate dialogue, and outline a roadmap. • As part of this roadmap, the Ministry of Finance should establish RE lending as a priority and create a policy on RE lending terms and insurance requirements. • Following the issuance of the Ministry of Finance's policy, the Reserve Bank of India should develop and disseminate guidelines for banks; help development banks, commercial banks, and the insurance industry to increase their capacity to support RE lending and risk mitigation. • National level stakeholders should engage with state rural land programs and urban livelihood missions of states to explore how RE can support their objectives; develop capacity at the state level for implementation of RE components of these programs, including to promote RE lending.
Indonesia	
Launch a larger-scale CE pilot demonstration project at an industrial park	• The Investment Coordinating Board of the Republic of Indonesia (BKPM) volunteered to promote the opportunity for a business-to-business exchange between Thailand's AMATA Corporation and an indusrtial park (possibly the Jababeka Industrial Park) in Indonesia. The pilot will use an integrated planning approach that includes RE, EE, and other aspects of industrial sustainability. • The Ministry of Energy and Mineral Resources (MEMR) and the Indonesia State Electricity Company (PLN) should discuss the implications of net metering and corporate RE procurements on utility revenues and PLN should adopt net metering incentives.

Pilot a large-scale photovoltaic (PV) demonstration project	• The Government of Indonsia could promote a large pilot PV project (above 10 MW), in partnership with the Overseas Private Investment Corporation (OPIC) and other parties, including private sector. • To help realize the demonstration project, donor support could be requested to organize a study tour to facilitate the sharing of business and financing experiences of existing CE investments in Indonesia and other Association of Southeast Asian Nations (ASEAN) countries. USAID Indonesia and other donors should support this type of peer exchange and capacity development sought by domestic business and government. • To promote replication of the demonstration project, the Government of Indonesia could promote regulatory changes to make the FIT more attractive and other improvements in the regulatory environment and incentives for grid-connected renewable electric power generation.
Develop a platform to obtain business perspectives on legal, financial, and institutional frameworks for RE policy and identify key barriers	• The Indonesian Chamber of Commerce could develop a platform for sharing private sector perspectives on RE policy with the Directorate General of New and Renewable Energy & Energy Conservation under MEMR, PLN, BKPM, Ministry of Environment and Forestry, and other chambers of commerce. • Donor support could be requested for a private sector forum to share input on the expected effects of specific draft regulations on RE development. A similar collaboration between U.S. Embassy in Vietnam and the Vietnam Business Forum could be a useful model. • Donors, development partners, and other stakeholders can provide technical assistance and develop white papers with recommendations, as determined to be needed.
Philippines	
Implement the RPS	• The National Renewable Energy Board (NREB) will conduct a benchmarking study as a preliminary step in implementing the RPS. This study will look at experiences with RPS in other countries. • NREB will develop a proposal on the RPS for review by the Department of Energy Philippines (DOE/P). DOE/P is expected to issue a circular on the final rule, possibly by the second quarter of 2017.
Pursue a net metering program	• NREB will develop a net metering proposal for review by DOE/P. DOE/P and the Electricity Regulatory Commission will review the proposal, possibly by the fourth quarter of 2017.
Institute a RE market or green energy option for utilities	• NREB will develop a proposal for a RE market or green energy option for utilities. DOE/P is expected to issue a circular on the finalized rule, possibly by the fourth quarter of 2017.
Thailand	
Establish a net metering policy	• Engage the Distributed Photovoltaic (DPV) Working Group and Department of Alternative Energy Development and Efficiency (DEDE) of the Ministry of Energy to identify potential regulatory changes and assess the impacts of PV expansion and net metering. • The DPV Working Group could hold workshops, develop a pilot project, and analyze financial impacts on the ratepayers and utilities. • Identify examples and documentation on markets with effective net metering policies and arrange a study tour for key regulatory and utility stakeholders . • Conduct a study of grid capacity and the implications of DPV energy and determine areas eligible to participate. • The USAID-funded Clean Power Asia activity and NREL could support the DPV Working Group on analysis and development of policy recommendations, including net metering. The DPV Working Group could then make recommendations to the National Energy Policy Council.

Establish stable, annual targets for RE	• Establish a working group that includes the Energy Policy and Planning Office (EPPO), DEDE, Office of the Energy Regulatory Commission, Electricity Generating Authority of Thailand, Metropolitan Electricity Authority, and Provincial Electricity Authority. Assign lead responsibilities to the EPPO. • Secure the political will for action, allocate budgets, conduct studies, and determine grid capacity to accommodate renewable electric power. • Under leadership of EPPO, prepare detailed annual RE plans and targets that address how long-term objectives are to be achieved.
Vietnam	
Implement a pilot for a direct power purchase agreement (PPA) to demonstrate proof of concept	• Establish a new legal mechanism for PPAs through the Energy Regulatory Authority of Vietnam (ERAV) to propose to the Ministry of Industry and Trade and the Prime Minister's Office. • The USAID-funded Vietnam Low Emissions Energy Program could support this work with ERAV, Ministry of Industry and Trade, Ministry of Planning and Investment, Ministry of Finance, and other USG entities (e.g., U.S. Embassy, OPIC, and the U.S. Trade and Development Agency). • Identify potential partners for the pilot (e.g., Saigon High Tech Park, Vietnam Business Forum, New Balance, and RE100 companies). • Interested partners could collaborate with ERAV to develop a bankable direct PPA and encourage RE investment in municipalities that have adopted these special mechanisms (e.g., PPAs, other options for corporate RE procurement). • Ensure national and subnational coordination and budgets to support replicatiion or adaptation of special mechanisms (such as those available in Ho Chi Minh City) to other municipalities.

Participants present results of the small-group discussions. Clockwise (from top left): Evan Scandling, Sunlabob; Anutra Sinchaipanich, Caterpillar; Marlon Apanada, Allotrope Partners; and Bethany Speer, NREL.

3.2 PEER-TO-PEER LEARNING IN THE PRIVATE SECTOR

Alex Perera (Deputy Director – Global Energy Program, WRI), Lars Kvale (Managing Director, APX, Inc.), and Hiep Huynh Dinh (Senior Analyst, Dragon Capital Group) provided an overview of PPAs and other contract tools, procurement processes and strategies, and financing options to support private sector CE investment. In two market-specific working groups, private sector participants identified shared challenges across countries and opportunities and methods for regional collaboration to address common barriers.

Group 1: Regulated Markets (including Cambodia, Indonesia, Myanmar, Vietnam)

Peer learning among utilities. Regulated electricity markets in the region have faced challenges in implementing tariff reforms and PPAs. Utilities have a pivotal role and can benefit by sharing good practices to help regulated market actors shift toward greater RE adoption. A regional organization, such as the Heads of Association of Southeast Asian Nations (ASEAN) Power Utilities/Authorities, could convene a series of high-level discussions with utility companies in the region to share experiences and lessons learned on transitioning to renewable energy.

Strengthening domestic financial institutions. Many domestic banks and financial institutions in Cambodia, Indonesia, Myanmar, and Vietnam need a greater technical understanding of RE technologies, business models, and risks. Banks are often unfamiliar with RE project timelines, cost overrun potential, and resource and grid-dispatch risks. Capacity development support for banks could increase RE lending.

Accessing international finance. CE developers in Cambodia, Indonesia, Myanmar, and Vietnam recognize that international financing is often available for RE development, but international standards for accessing finance are often higher than domestic standards. Modifying the standards of international finance providers to better align with domestic conditions can help domestic developers access finance.

Recognizing country context. Corporate CE sourcing beyond utilities is nascent in Cambodia, Indonesia, Myanmar, and Vietnam. Companies, donors, and other development partners could help governments improve the regulatory environment for open sourcing of electricity and self-generation. The domestic context and regulatory framework differs in each country, and approaches to improve the regulatory environment must be country-specific.

Group 2: More Open Markets (including India, the Philippines, Thailand)

Designing effective information campaigns. Participants from India, the Philippines, and Thailand agreed on the importance of timely, accurate, and targeted stakeholder education and advocacy for scaling up CE investment. They proposed increasing collaboration among market actors within and across countries to share lessons learned on the design and implementation of effective awareness and advocacy campaigns on topics such as net metering and incentives.

Reducing currency risks. Participants noted the importance of currency risks in CE investment, especially for small developers. Market actors can share models across countries for addressing currency risks effectively and for accessing blended capital to reduce foreign exchange risk.

Recognizing country context. Participants from India, the Philippines, and Thailand expanded the list of government policy interventions that could catalyze greater CE investment (these are incorporated in Table 1).

Summary of Recommendations Prepared by Groups 1 and 2

Table 3 summarizes private sector participants' recommendations for priority collaborations among private sector stakeholders.

Table 3: Priority Collaborations Recommended by Private Sector Leaders

Group	Interventions needed within the private sector
Regulated Markets	• Convene a forum of utilities for information sharing on tariff reforms, power purchase agreements, and other challenges • Develop the capacity of domestic banks for expanding RE lending • Increase the capacity of domestic developers to access international financing • Modify the standards of international finance providers to align with domestic context
More Open Markets	• Share good practices and lessons learned in designing effective information campaigns on net metering and other topics • Share models for addressing currency risks, especially for small CE developers • Improve access to blended capital to reduce developer risks

3.3 PEER-TO-PEER LEARNING BETWEEN THE PRIVATE AND PUBLIC SECTORS

Lawrence Wu (Director, Sunseap Group, a CE solutions provider in Singapore) described how the policy environment and open market in Singapore has encouraged CE investment, despite the limited availability and high cost of land. The Government of Singapore has a technology-neutral policy for energy with streamlined processes to facilitate private sector participation. For example, applications for grid connections can be completed online and connections generally occur within two weeks.

Mr. Wu emphasized that each country has its own policy and market conditions and must find its own way. He recommended that national development banks and multilateral development banks support PPAs and other risk mitigants to decrease the risks of RE lending by domestic commercial banks, cost of capital for developers, and cost of RE for purchasers.

3.4 TOOLS AND RESOURCES TO INCREASE CLEAN ENERGY INVESTMENT

Figure 2 lists a sampling of tools and resources provided by USAID, other USG agencies, and other development partners to help governments and the private sector to accelerate CE investment.

Figure 2: Tools and Resources

Resource	Coverage	Overview
Clean Energy Investment Accelerator (CEIA)	Global emerging markets, with focus on Vietnam, the Philippines, Indonesia, and India within Asia	CEIA is a PPP to drive large-scale CE deployment. CEIA engages corporations to secure and aggregate CE purchase commitments; works with donors to develop programs to grow the CE pipeline and close financing gaps; and addresses key regulatory and policy gaps. *CEIA is co-led by Allotrope Partners, NREL, and WRI.*
Clean Energy Solutions Center (CESC)	Global (CESC has responded to requests from 80 countries to date)	CESC provides remote, no-cost expert technical assistance to governments on policies and regulations to support CE investments. CESC also offers training through webinars and a curated library of documents and resources for policymakers. *CESC is implemented by NREL.*
Climate Policy Initiative (CPI)	Global, with focus on China, India, and	CPI's energy finance program works with governments, utilities, companies, banks, investors, and foundations around the world

	Indonesia within Asia	to understand the true cost of the transition to a low-carbon energy system; to evaluate and improve policy; and to design new financial vehicles that can lower costs and align investment returns from low-carbon energy assets with investors' needs.
Greening the Grid	Global	Greening the Grid offers a toolkit to support developing countries in defining and implementing integration of RE in the electric grid. Toolkit resources showcase policy, market, and regulatory mechanisms to address grid-integration challenges; and share guidance on applying these mechanisms to develop robust grid-integration road maps. *It is supported by the USG Enhancing Capacity for LEDS program.*
Overseas Private Investment Corporation (OPIC)	Global (OPIC has provided $8 billion in CE investment to date)	OPIC works with the private sector to stimulate investment in challenging frontier markets through investment finance, political risk insurance, and investment funds. OPIC supports CE investments in emerging economies with evolving regulatory environments. *OPIC is a USG finance institution.*
Renewable Energy Explorer	Global, with focus on Bangladesh, India, Indonesia, Nepal, the Philippines, and the Lower Mekong within Asia	RE Explorer is a no-cost, online tool to facilitate RE decision making, investment, and deployment. It provides up-to-date RE resource data, other geographic information system data, analytics on technical and economic potential, and a platform for distributing data and metadata. *RE Explorer is developed and maintained by USAID and NREL.*
CEADIR (USAID Washington-funded)	Global, with focus on India, Indonesia, the Philippines, and Vietnam within Asia	CEADIR provides analysis and support to help governments and private sector make the business and economic case for investing in CE, sustainable landscapes, and climate change adaptation. *CEADIR is funded by USAID Washington, and co-funded by USAID regional and country missions.*
Clean Power Asia (USAID Asia-funded)	Regional, with focus on Lower Mekong countries and other ASEAN member states	Clean Power Asia provides technical assistance to governments on integrated resource planning, smart incentives, and policy design to increase revenues and reduce risks. Assistance to private sector supports reduction of the cost of finance, such as through standardized documentation and evaluation practices. *Clean Power Asia is funded by USAID Asia.*
PFAN-Asia (USAID Asia-funded)	Regional, with focus on Bangladesh, Cambodia, India, Indonesia, Laos, Malaysia, the Maldives, Nepal, the Philippines, Sri Lanka, Thailand, and Vietnam	PFAN-Asia provides assistance to developers on investment readiness assessments, financing facilitation, strategic advisory and coaching. Program staff train CE project developers and entrepreneurs to develop high-quality projects and proposals and match qualified CE project developers with investors to secure financing.
USAID country mission support	India, Indonesia, the Philippines, Vietnam, and other Asian countries	USAID provides support to help increase private sector investment in CE through tailored country-specific programs. These include Partnership to Advance Clean Energy - Deployment in India; Indonesia Clean Energy Development II; Building Low Emission Alternatives to Develop Economic Resilience and Sustainability in the Philippines; and Vietnam Low Emission Energy Program and Vietnam Clean Energy Program.

4. RECOMMENDATIONS

Private sector leaders identified priorities for government action to help accelerate CE investment and development. These recommendations are synthesized into three themes: improve the policy and regulatory environment, strengthen the ecosystem for CE financing, and increase government capacity and public-private collaboration.

Anirban Ghosh, Mahindra Group, presents country-specific challenges, solutions, and next steps for India, from small-group discussions.

Theme 1: Improve the Policy and Regulatory Environment

Review and revise existing policies and regulations that conflict with renewable energy development goals or create market uncertainties. Participants identified needed adjustments to policies to increase RE investments and reduce risks for various stakeholders. This includes ensuring that there are clear legal structures for RE investments, clear sunset clauses in policies, and clear rules for retail energy suppliers and off takers on ownership of RE attributes (i.e., who can claim the benefit of the generation associated with a specific RE investment or PPA).

Institute new policies and incentives that provide clear direction and support the business case for renewable energy investment. There is high impact potential in Southeast and South Asia from introducing new policies to facilitate private sector action. Examples include net metering, direct PPAs that can attract financing, renewable portfolio standards, penalties for non-compliance with RE purchase obligations, and RE and EE mandates for new construction.

Prepare actionable plans with clear targets. Although all participating countries had national RE targets, the private sector needs more information on the assumptions behind those targets and annually updated implementation plans that show how the targets will be met.

Improve electricity price forecasting and allow cost-reflective tariffs that reflect changing technology and enable renewable energy to compete. In some countries, improvements are needed in short- and medium-term electricity price forecasting and rationalizing tariffs to reduce user subsidies and recover production costs, in order to demonstrate bankability of RE investments and help attract financing. Up-to-date information on the changing financial and economic costs of renewable and nonrenewable sources of electricity, including grid integration, external costs and co-benefits, and risks is also important. Opportunities for increasing information sharing and peer exchange across countries, especially between utilities, on win-win models for all stakeholders can support electricity sector reform and increase RE investment.

Theme 2: Strengthen the Clean Energy Financing Environment

Develop the capacity of domestic commercial banks to increase clean energy lending and obtain additional capital. Many domestic commercial banks must increase their understanding of RE technologies, business models, and the risks and returns from RE lending. Governments must prioritize capacity development of domestic banks in order to scale up CE investment. It may be helpful for some governments to classify RE as a priority lending sector.

Help clean energy developers access finance. Developers need more information on domestic and international sources of financing. Governments can provide or facilitate access to capacity development services and finance for early-stage investment preparation to fill an important market gap and help

develop a robust CE investment pipeline. Governments can encourage bundling of small investments in order to make it more feasible for small investments to obtain financing. Mechanisms for reducing currency risks and engaging finance providers to align their standards with local context can also increase access to domestic and international financing. Participants noted that loan guarantee funds and other risk mitigants are also important.

Theme 3: Increase Government Capacity and Public-Private Collaboration

Governments can improve their capacity to support renewable energy markets at the national and subnational levels. Governments have strengthened their capacities to increase RE investment, but face continuing needs. Capacities may be weak at the subnational level even if national institutions are strong. Key areas for capacity development include competitive energy procurements, public-private partnerships, cross-agency coordination, and grid integration and regulation.

Increase meaningful engagement with various private sector stakeholders. There are many successful examples in the region of increasing government engagement on CE with the domestic and international private sector. Participants recommended that governments convene or support more dialogues with private sector stakeholders to understand the perspectives and priorities of the private sector and to account for these views in policies and regulations. The Vietnam Business Forum's Made in Vietnam Energy Plan is a good example of the value of this approach. Private sector participants also recommended relaxing restrictions on RE investments, increasing the ease of doing business through streamlined permitting of RE applications, promoting more foreign direct investment opportunities, proactively identifying corporations willing to make RE purchase commitments, and launching national information campaigns to promote greater CE investment.

Collaborate with the private sector on pilot or demonstration projects where needed. Government and donor support of pilot or demonstration projects can provide proof-of-concept for new technologies and business models, but should have strong private sector involvement. For example, a pilot for joint RE procurement by companies in an industrial park could help 1) adapt procurement models that reduced transaction costs in other markets to local contexts, 2) test new CE technologies for the market, 3) share data and lessons to make the business case and assess economic co-benefits, and 4) develop replicable approaches that can be scaled up.

5. CLOSING REFLECTIONS OF SELECTED PARTICIPANTS

Participants provided concluding insights and made commitments for action.

Ayala understood that we could not destroy the planet as we pursue our growth… The thinking on climate change has improved a lot, but other members of society may not understand why we need clean energy. There are still voices that say we need cheap energy (i.e., coal) now in order to grow and catch up – this thinking is the 'anti-driver' for clean energy. We must start conversations with people outside of the small circle of clean energy advocates and share the business case and benefits of renewable energy.

Anna M. Gonzales, Ayala Land Inc.

I have gained insight at this meeting from listening to perspectives that I do not often hear in one room ….We are asking people to do things differently and must understand the motivations of those being asked to act. I have heard many people say "We can't or we can, but". Understanding the underlying context and motivations can help us identify workable solutions. I volunteer to help answer these key questions in India and the region.

Anirban Ghosh, Mahindra & Mahindra Limited

I look forward to replication of effective approaches for public-private engagement to improve policy frameworks for energy investment – such as the Vietnam Business Forum's Made in Vietnam Energy Plan – in other Asian countries.

Peter du Pont, USAID Asia

At this meeting, I realized that every country faces obstacles and problems implementing their own renewable energy agenda, and I can be more positive about moving ahead to address our own set of challenges in the Philippines. I also learned of many tools that I did not know existed, which can help corporations and governments to be prudent in choosing a path forward. As I discharge my function as Chairperson of the NREB, I am fully committed to finalize the outstanding draft mechanisms provided in the Philippine Renewable Energy Act of 2008 that will help to move forward renewable energy utilization in the Philippines, and to share lessons learned and policy pitfalls from the Philippine experience to help countries facing similar challenges.

Atty. Jose M. Layug, Jr., NREB, Philippines

The drive towards clean energy is not only about reducing carbon emissions. We must not forget that it is also about moving the human development index forward, including helping those who may be difficult to reach. Furthermore, the transition to renewable energy is not only for big business. It needs to be for small and medium enterprises too. We must find mechanisms to increase the participation of small and medium enterprises in clean energy, particularly at the subnational level.

Ali T. Sheikh, CDKN

ANNEX A: MEETING PROGRAM

MONDAY, MARCH 27 – DAY ONE

Time	Session
08:45 – 09:30	**Welcome and Opening Remarks** Opening remarks on behalf of the workshop organizers will be followed by an inspirational keynote address on scaling up sustainability and a vision for a clean energy future to set the stage for this two-day event. **Facilitator:** Peter du Pont, Senior Climate Change Advisor, USAID Asia **Welcome remarks:** • Glyn T. Davies, U.S. Ambassador to the Kingdom of Thailand **Keynote address:** • Vikrom Kromadit, Chief Executive Officer, AMATA Corporation Public Company Limited
09:30 – 10:30	**Session 1: The Role of Corporate Clean Energy Procurement and Investment Commitments in Driving a Clean Energy Transition** This panel will feature representatives of leading corporations speaking about their clean energy goals and procurement commitments in Asia and corporate interests and intent behind those goals. Speakers will discuss the drivers of their commitments, challenges they face in operationalizing commitments, timelines for implementation, and where they see needs for technical and other assistance. Panelists will also discuss how corporate commitments can help drive a broader and faster transition toward a clean energy economy. **Panel Moderator:** Alex Perera, Deputy Director – Global Energy Program, World Resources Institute (WRI) **Panelists:** • Anirban Ghosh, Chief Sustainability Officer, Mahindra Group, Mahindra & Mahindra Limited • Anna Gonzales, Sustainability Head, Ayala Land Inc. • Peter du Pont, Senior Climate Change Advisor, USAID Asia
10:30 – 11:00	**Morning Coffee Break and Networking**
11:00 – 12:00	**Session 2: Country Leadership to Enable Private Sector Clean Energy Investment** Government leaders will present targets from their nationally determined contributions (NDCs) related to clean energy development, and discuss the role they envision the private sector playing in helping to achieve those targets. Panelists will also share insights on innovative policy and regulatory actions that are underway or planned in order to improve the enabling environment for private sector investment in their countries. A moderator will facilitate discussion among panelists and with the audience related to balancing the tradeoffs. **Panel Moderator:** Soumya Chaturvedula, Programme Coordinator, Asia LEDS Partnership **Panelists:** • Shwetal Shah, Technical Advisor, Climate Change Department, State of Gujarat, India • Farah Ratnadewi Indriani, Deputy Chairman for Investment Climate Development, Indonesia Investment Coordinating Board, Indonesia • Atty. Jose M. Layug, Jr., Chairperson, National Renewable Energy Board, Philippines • Hien Nguyen Thi Minh, Deputy Director General, Ministry of Planning and Investment, Vietnam
12:00 – 13:00	**Session 3: Breakout Groups: Understanding Needs and Priorities – Public and**

	Private Sector Perspectives Participants will break into country-specific groups and engage in interactive working sessions to identify key policy needs of both companies and governments to accelerate investment in clean energy. Facilitators will lead participants in exploring the benefits and drawbacks of policies that support and hinder clean energy investment in each country, laying the foundation for developing high-level recommendations in Session 5 and action plans in Session 7.1. **Facilitator:** Mikell O'Mealy, Activity Manager, USAID CEADIR **Group facilitators:** • India group: MK Balaji, USAID PFAN-Asia, and Alex Perera, WRI • Indonesia group: Suzanty Sitorus, Climate Policy Initiative • Philippines group: Marlon Apanada, Allotrope Partners • Vietnam group: Vu Thi Kim Thoa, USAID Vietnam Clean Energy Program • Cambodia, Myanmar, Thailand and other key markets: Boonrod Yaowapruek, USAID Clean Power Asia
13:00 – 14:00	**Lunch**
14:00 – 14:45	**Session 4: Scene Setting – Opportunities and Challenges in Scaling up Clean Energy Investment in Asia** This session will provide an overview of the current investment environment for clean energy in Asia and the challenges to scaling up investment. Leading experts will present trends in energy sector investment regionally and in key markets, with a focus on renewable energy, and insights and case studies on innovative corporate clean energy transactions in Asia. **Moderator:** Rachel Ross, Director of Partnerships for Energy Policy and Investment, Allotrope Partners **Speakers:** • Michael Waldron, Renewable Energy Markets Analyst, International Energy Agency • Lars Kvale, Managing Director, APX, Inc.
14:45 – 16:15	**Session 5: Breakout Groups: Developing Recommendations to Unlock Investment** Participants will break into the same country-specific groups to evaluate clean energy project pipelines, financing options, and markets for purchasers. Facilitators will guide each group in prioritizing key policy, finance, and other gaps that need to be addressed. Country groups will develop recommendations and propose actionable steps for partners to carry forward in each country. Group representatives will report findings in plenary. **Facilitator:** Mikell O'Mealy, Activity Manager, USAID CEADIR **Group facilitators:** • India group: MK Balaji, USAID PFAN-Asia, and Alex Perera, WRI • Indonesia group: Suzanty Sitorus, Climate Policy Initiative • Philippines group: Marlon Apanada, Allotrope Partners • Vietnam group: Vu Thi Kim Thoa, USAID Vietnam Clean Energy Program • Cambodia, Myanmar, Thailand and other key markets: Boonrod Yaowapruek, USAID Clean Power Asia
16:15 – 16:45	**Afternoon Coffee Break and Networking**
16:45-17:30	**Report Back on Breakout Group Assessments in Key Markets** Representatives of each breakout group will report findings in plenary, with support from the group facilitators. **Facilitator:** Mikell O'Mealy, Activity Manager, USAID CEADIR
17:30 – 17:45	**Session 6: Wrap Up and Summary of Day One** Leading private and public sector participants will provide brief reflections on Day One findings

	related to priority challenges and opportunities identified, and a facilitator will summarize next steps for addressing these challenges and opportunities in Day Two. **Facilitator:** Peter du Pont, Senior Climate Change Advisor, USAID Asia **Speakers:** • Marc Stuart, Founding Partner and Chief Executive Officer, Allotrope Partners • Ali Sheikh, Director – Asia, Climate and Development Knowledge Network
18:00 – 20:00	**Evening Networking Reception**

TUESDAY, MARCH 28 – DAY TWO

Time	Session
09:00 – 09:15	**Welcome, Review of Day One Findings, and Overview of Day Two** Workshop organizers will welcome participants and provide a brief summary of key findings from Day One and an overview of Day Two. **Facilitator:** Mikell O'Mealy, Activity Manager, USAID CEADIR **Speakers:** • Peter du Pont, Senior Climate Change Advisor, USAID Asia • Lawrence Wu, Director & Co-Founder, Sunseap Group
	Session 7: Challenges and Solutions: Peer-to-Peer Learning Participants will join either the public or private sector track. Session moderators will announce coffee break according to the session program.
09:15 – 12:30	**Track 7.1: PUBLIC SECTOR** Government officials will share, learn and discuss strategies for enabling private sector clean energy investment with sector experts and their peers. Following an overview of clean energy incentives and policies that support investment, participants will break into facilitated groups to identify detailed solutions to increase private sector investment. **Organizers:** Bethany Speer and Jenny Heeter, National Renewable Energy Laboratory (NREL) **Presenters and facilitators:** • Wathanyu (Num) Amatayakul, Energy Policy Expert, USAID Clean Power Asia • Matthew Ogonowski, Clean Energy Specialist, USAID Global Climate Change Office • Jenny Heeter, Senior Energy Analyst, NREL • MK Balaji, PFAN-Asia; Suzanty Sitorus, Climate Policy Initiative; Jennifer Leisch, USAID; Ha Dang Son, Vietnam Low Emissions Energy Program; to lead small-group discussions **Output:** Participants will develop customized action plans with specific recommendations on policies, programs, and steps they can take, adopt, and promote in their countries to accelerate private sector investment.
09:15 – 12:30	**Track 7.2: PRIVATE SECTOR** Private sector leaders will describe innovative approaches, success strategies, and challenges associated with large-scale clean energy purchasing. Presenters will provide an overview of power purchase agreements (PPAs) and other contract tools, procurement processes and strategies, and financing options. This will include presentation of case studies and model agreements. Small groups will evaluate relevant tools by market type, assess the costs of RE across markets, identify potential pilot projects, and explore self and third-party financing options. **Moderators:** Marc Stuart, Allotrope Partners **Presenters and facilitators:**

	• Alex Perera, Deputy Director – Global Energy Program, WRI • Lars Kvale, Managing Director at APX, Inc. • Hiep Huynh Dinh, Senior Analyst, Dragon Capital Group • Almo Pradana, Ashok Thanikonda and Clorinda Kurnia Wibowo, WRI; Marlon Apanada, Allotrope Partners; Vu Thi Kim Thoa, USAID Vietnam Clean Energy Program; to lead small-group discussions **Output:** Participants will develop "Principles for Scaling Clean Energy Investment in the Commercial and Industrial Sector in Asia" to be shared with governments, and identify potential pilot projects for third-party financing.
12:30 – 13:45	**Lunch**
13:45 – 14:30	**Session 8: Sharing Challenges and Solutions for the Private and Public Sector** Representatives from the public and private sector tracks will report on key challenges and solutions to operationalize corporate clean energy procurement commitments and enable private sector investment at scale. A moderator will facilitate discussion to capture findings, recommendations, and needed next steps. **Facilitator:** Peter du Pont, Senior Climate Change Advisor, USAID Asia
14:30 – 15:00	**Afternoon Coffee Break and Networking**
15:00 – 15:45	**Session 9: Tools and Resources to Unlock Clean Energy Investment to Achieve Corporate and Country Goals** Partners will provide a rapid overview of tools, resources, and technical and other assistance available to support the private sector and governments in unlocking clean energy investments. Participants will be asked to share specific commitments their companies or organizations can make going forward. Facilitated discussion will focus on how to scale up investment in specific countries, and identify high-level needs of the private sector to enable large-scale renewable energy procurement and clean energy investment more broadly. **Facilitator:** Sandra Khananusit, Partnership Engagement Specialist and Activity Coordinator, USAID CEADIR **Speakers:** Donor and development partners: Clean Energy Investment Accelerator, Clean Energy Solutions Center, Climate Policy Initiative, Overseas Private Investment Corporation, and USAID clean energy programs, to highlight tools, resources, and other assistance available
15:45 – 16:30	**Session 10: Closing Reflections** Leading private and public sector participants will share their vision for scaling up clean energy investments, why it is important, and the critical roles that corporations and governments will play. These remarks will highlight ways in which clean energy investment helps both companies and countries achieve their goals for sustainable growth and economic and community well-being, linking back to national and global climate change targets. A facilitator will summarize accomplishments, next steps, and linkages with other key efforts in the region. **Facilitator:** Peter du Pont, Senior Climate Change Advisor, USAID Asia **Speakers:** • Ali Sheikh, Director – Asia, Climate and Development Knowledge Network • Atty. Jose M. Layug, Jr., Chairperson, National Renewable Energy Board, Phillippines • Anna Gonzales, Sustainability Head, Ayala Land Inc. • Anirban Ghosh, Chief Sustainability Officer, Mahindra Group, Mahindra & Mahindra Limited

ANNEX C: REQUESTS FOR ADDITIONAL SUPPORT FROM DEVELOPMENT PARTNERS

Participants relayed country-specific and regional requests for support from international development partners, such as USAID, other USG agencies, and other donors and development finance institutions, to help accelerate clean energy (CE) investment.

Country	Illustrative Request for Support
India	Development partners could provide capacity development to the Ministry of New and Renewable Energy to help drive the overall process of prioritizing renewable energy (RE) as a lending sector. Partners could also facilitate dialogues with domestic banks and other lenders to help operationalize a new RE policy and strengthen institutional capacity for state level authorities.
Indonesia	The Government of Indonesia could partner with the Overseas Private Investment Corporation to pilot a large-scale solar photovoltaic demonstration project. Development partners could support facilitation and capacity development through identifying existing projects and support exchange of business experiences within Indonesia or with member countries of the Association of Southeast Asian Nations that can offer lessons for developing large-scale RE projects and attracting external finance. Development partners, such as U.S. Department of Commerce or USAID, could support the convening of the private sector to develop and prioritize needed actions related to policy incentives and removing barriers to scale RE deployment.
Philippines	Development partners, such as USAID and the National Renewable Energy Laboratory, could provide technical assistance and capacity development to support National Renewable Energy Board in advancing its top three priorities in the coming year: implementing renewable portfolio standards, pursuing a net metering program, and/or instituting a RE market and utility green energy option.
Thailand	Development partners, such as USAID Clean Power Asia, could support analysis on the revenue impacts of the distributed photovoltaic pilot scheme to the ratepayer and to the utilities, and study grid capacity to benchmark the distributed photovoltaic feasibility and determine which areas would be eligible to participate. Findings can support the distributed photovoltaic working group within the Ministry of Energy, which is responsible for proposing a net metering policy through government channels.
Vietnam	Development partners, such as USAID Vietnam Low Emission Energy Program, could initiate work with the Government of Vietnam to develop and pilot a bankable direct power purchase agreement as proof-of-concept, to support larger efforts to establish and replicate such special mechanisms across municipalities and provinces.

Across Southeast and South Asia

Development partners could:

- Convene country-specific public-private sector dialogues to synthesize business perspectives on CE policies and regulations needed to improve the enabling environment for private sector investment, enabling businesses to provide recommendations to governments in a unified voice;

- Support governments in developing capacity of local banks and financial institutions on assessing RE projects and other key needs, to help local financiers view RE as a lower risk investment;
- Facilitate dialogue between international companies and/or international finance institutions and local CE developers on standards for accessing international finance and on preparation of project technical and finance documents, to strengthen capacity of local developers to succeed in accessing international finance and/or to tailor international standards towards local capacities;
- Support governments and the private sector in identifying cases and exchanging experiences on effective practices, strategies, and pitfalls in high-interest topics such as: implementing tariff reform and power purchase agreements (for utilities), accessing blended capital (for developers), and designing effective stakeholder information and education campaigns on CE participation; and
- Assist governments in integrating consideration and assessment of co-benefits of CE, compared to traditional energy sources, in the decision-making process for energy policy and private sector investment.

ANNEX D: ROLE OF CLEAN ENERGY IN THE CLIMATE CHANGE COMMITMENTS OF INDIA, INDONESIA, THE PHILIPPINES, AND VIETNAM

THE ROLE OF CLEAN ENERGY IN THE CLIMATE CHANGE COMMITMENTS OF INDIA, INDONESIA, PHILIPPINES, AND VIETNAM

WHAT IS THE PARIS AGREEMENT?

The Paris Agreement is an international agreement that urges nations to undertake ambitious efforts to combat climate change through mitigating greenhouse gas (GHG) emissions and adapting to impacts. Countries that ratify the Paris Agreement are required to outline the mitigation actions they intend to take, report regularly on GHG emissions and on implementation efforts, and strengthen those efforts in the coming years.

Businesses and investors worldwide have expressed support for the Paris Agreement, pledging to work with governments to implement needed measures and making ambitious commitments of their own to help address climate change and promote sustainable development.

WHAT ARE NATIONALLY DETERMINED CONTRIBUTIONS (NDCS) AND WHAT COMMITMENTS HAVE COUNTRIES MADE TO MITIGATE GHG EMISSIONS?

A NDC outlines the post-2020 climate mitigation actions that a country intends to take and associated GHG emission reductions. Each country prepares its NDC in consultation with diverse stakeholders, including government ministries and institutions, academia, private sector, and civil society organizations. Aligning NDCs with national development plans and sector strategies – and with business and investment strategies – can provide clear direction for action economy-wide action.

Figure 1 shows the GHG mitigation commitments made by the governments of India, Indonesia, the Philippines, and Vietnam. To review full text of submitted NDCs, visit the NDC Registry at **www4.unfccc.int/ndcregistry.**

Figure 1: Commitments from India, Indonesia, the Philippines, and Vietnam

COMMITMENTS FROM INDIA, INDONESIA, THE PHILIPPINES, AND VIETNAM

	INDIA	INDONESIA	PHILIPPINES	VIETNAM
2012 Global GHG Emissions Ranking (excluding LULUCF)	4th	10th	39th	32nd
Paris Agreement Status	Signed, ratified and entered into force November 4, 2016	Signed, ratified and entered into force November 30, 2016	Signed, ratified and entered into force April 22, 2017	Signed, approved and entered into force December 3, 2016
Mitigation targets (reduction by 2030)	Emission intensity 33-35% against 2005	29% against BAU (unconditional); 41% against BAU (conditional)	70% against 2010 (unconditional)	8% against BAU (unconditional); 25% against BAU (conditional)

DO THE NDCS OF INDIA, INDONESIA, THE PHILIPPINES, AND VIETNAM SPECIFY MITIGATION TARGETS FOR THE ENERGY SECTOR?

No. For this group of countries, NDC targets are expressed as total national emission reductions and are detailed by sector. In India, however, the NDC includes a supplementary target related to GHG mitigation in the energy sector, to achieve 40 percent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030.

IN THE ABSENCE OF SPECIFIC ENERGY SECTOR TARGETS, DO THE NDCS HIGHLIGHT ENERGY SECTOR MITIGATION?

Yes. Each NDC clearly recognizes that the energy sector is responsible for the largest share of national emissions and explicitly states that mitigation measures in the energy sector will be pursued (e.g., in power, in buildings, in transport). In India, Indonesia, and Vietnam, energy industries generate the most GHG emissions within the energy sector, while in the Philippines transport is the highest emitter in the energy sector.[1]

IS CLEAN ENERGY DEVELOPMENT HIGHLIGHTED IN THE NDCS?

Yes. All four countries explicitly give priority to undertaking and enabling actions that support renewable energy development, demonstrating commitment to accelerate renewable energy investment through key priorities that range from promoting clean and renewable energy sources, to supporting research on the application of new technologies, to improving the efficiency of energy generation, transmission, and grid management, as highlighted in **Figure 2.**

Figure 2: Actions governments will take and support to mitigate GHG emissions through renewable energy development.

Promote clean and renewable energy sources/ development	India, Indonesia, Philippines, Vietnam
Increase the share of renewable energy in energy supply mix	India, Indonesia
Phase out fossil fuel subsidies / apply market instruments to support renewable energy	India
Develop renewable energy technology market, domestic industries and local service providers	India
Support research and the application of advanced technologies for renewable energy	India, Vietnam
Launch new programs on wind energy and waste to energy	India
Use degraded lands for renewable energy	Indonesia
Use alternative, high-efficiency, cleaner technologies for conventional and/or thermal power generation	India, Philippines
Promote generation, transmission, and/or grid efficiency	Philippines, Vietnam

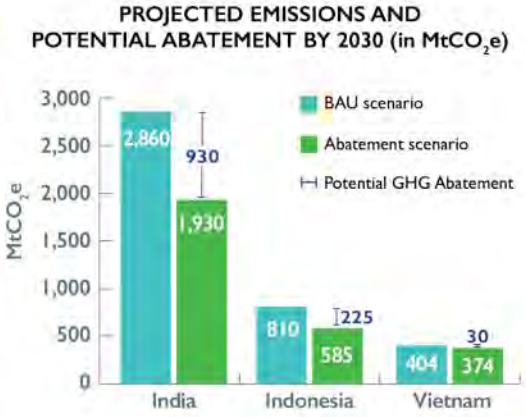
*"**India** is determined to continue with its ongoing interventions, enhance the existing policies, and launch new initiatives…[including] promoting renewable energy generation and increasing the share of alternative fuels in overall fuel mix."*

*"[**Vietnam's**] policies encouraging energy savings and efficiencies in production and daily life, through the application of energy saving and renewable energy technologies are a priority."*

WHAT TYPES OF RENEWABLE ENERGY DO THE NDCS HIGHLIGHT?

The NDCs do not commit to a priority resource type (e.g., solar, wind) but instead mention **many resource types** as components of each county's strategy. India[ii], Indonesia[iii], and Vietnam[iv] have used marginal abatement cost (MAC) curves to assess which renewable energy resources offer the greatest potential for impact based on cost-effectiveness. Results differ by country, illustrating complex and dynamic factors. All three countries' MAC curves indicate that small hydropower has a high abatement potential at a negative cost; while biomass, wind power, and solar were cited as having high abatement potential at positive costs. MAC curves also identify where enabling environments can be strengthened or where policy actions can make the cost-benefit ratio for a renewable energy resource more attractive. **Figure 3** demonstrates potential abatement as a proportion of total emissions based on MAC curve results.

Figure 3: Potential abatement as a proportion of total emissions based on MAC curve results



WHAT ARE THE MOST SIGNIFICANT BARRIERS FOR ACHIEVING GHG REDUCTIONS FROM RENEWABLE ENERGY?

Barriers cited in the NDCs or MAC analyses for these countries include:

- Limited (and antiquated) publicly available data on energy resource mapping;
- Lack of feasibility analysis for renewable energy development;
- Lack of project development funding to cover feasibility studies and front-end design;
- Higher capital cost for many renewable energy technologies or higher cost of transmission access;
- Significant off-take risks that constrain commercial bank financing;
- Limited access to advanced technologies and difficulty adapting those technologies to local conditions;
- Lack of or weak end-to-end supply chains and skilled human resources to manage those supply chains; and
- Lack of or weak regulatory support from governments for renewable energy development and investment.

DESPITE THESE BARRIERS, IS THERE PROGRESS IN RENEWABLE ENERGY DEVELOPMENT?

Yes. While governments are working to implement their climate change commitments under the Paris Agreement, a growing number of leading multinational corporations have also committed to ambitious climate action. More than 80 global companies have joined RE100,[v] pledging to fuel their operations with 100 percent renewable energy in the coming years. Despite these pledges, there remain economic, structural, and social barriers to achieve renewable energy goals in Asia's dynamic markets. Joint action between the public and private sectors to address these challenges and capitalize on opportunities will help Asian countries transition to greener, cleaner economies.

HOW CAN GOVERNMENTS, BUSINESSES, AND INVESTORS WORK TOGETHER TO INCENTIVIZE PRIVATE SECTOR INVESTMENT IN CLEAN ENERGY DEVELOPMENT, ALIGNED WITH NATIONAL CLIMATE CHANGE TARGETS?

In March 2017, the U.S. Agency for International Development (USAID), Asia Low Emissions Development Strategies (LEDS) Partnership, and partners convened nearly 90 private sector leaders and senior government officials to discuss near-term opportunities to achieve clean energy targets in Southeast and South Asia. In a collective voice, these early-movers agreed on collaborative actions that government can lead and the private sector can support to accelerate deployment of private investment in clean energy solutions at scale.

These priority actions include:

- Updating energy planning roadmaps annually to show how clean energy targets will be met;
- Convening public-private sector dialogues to understand private sector perspectives and priorities, and to give weight to the unified voice of the private sector;
- Reviewing existing policies and regulations that conflict with clean energy targets, and establishing new policies and incentives that support the business case for renewable energy investment;
- Collaborating on strategic pilot projects that demonstrate the economic and business case for clean energy at scale, to enable and promote broader adoption of new policy mechanisms and business models; and
- Building capacity and providing mechanisms to help local banks to deploy clean energy finance and support local developers in increased access to finance.

View the complete key findings and recommendations from the regional meeting on *Enabling Private Sector Clean Energy Investment in Southeast and South Asia*, March 27-28, 2017 in Bangkok, Thailand: http://www.asialeds.org/events/enabling-private-sector-clean-energy-investment-in-southeast-and-south-asia/

In action-oriented small group discussions, private and public sector leaders identified country-specific challenges, solutions, and concrete actions to enhance the enabling environment for clean energy investment in Southeast and South Asia.

i. India First Biennial Update Report (2016); Indonesia First Biennial Update Report (2015); Philippines Second National Communication (2014); Vietnam First Biennial Update Report (2014)

ii. McKinsey & Company, Environmental and Energy Sustainability: An Approach for India (2009)

iii. Indonesia National Council on Climate Change, Indonesia's Greenhouse Gas Abatement Cost Curve (2010)

iv. Vietnam Ministry of Natural Resources and Environment, Technical Report on Vietnam's Intended Nationally Determined Contribution (2015)

v. RE100 and the Renewable Energy Buyers Alliance: www.there100.org and www.rebuyers.org

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