

EXPLORING FINANCIAL POLICY AND REGULATORY BARRIERS TO PRIVATE CLIMATE FINANCE IN SOUTH- EAST ASIA

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ASrIA - AIGCC

Association for Sustainable &
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About the report

This report was made possible by support from Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the German Ministry for Economic Cooperation and Development (BMZ).

In 2012, GIZ and ASrIA-AIGCC established the Alliance for Public-Private Climate Finance Asia-Pacific to encourage and facilitate low-carbon and climate resilient investment in the Asia-Pacific region. In support of the Alliance's goals, this report aims to positively contribute to the improvement of financial markets policy and the regulatory environments that support private sector actors in providing climate finance.

Research for the report was undertaken through a series of interviews held in the research countries, in addition to a desk review of literature and data, carried out between October 2014 and February 2015.

About ASrIA

The Association for Sustainable & Responsible Investment in Asia (ASrIA) is the leading organization in Asia dedicated to promoting sustainable finance and investment across the region. ASrIA plays a critical role - as a thought leader, advocate and convener - in transforming Asia's financial markets into the driver for a sustainable future. We encourage thoughtful participation by financial institutions, governments, multilateral bodies, corporates and NGOs in addressing the challenges that Asia will face in the years ahead. As a member-based think tank, for over 14 years ASrIA has provided leadership, helped to build capacity and leveraged expertise to promote the development of sustainable financial markets and systems in Asia. Occupying a unique position of working across geographical and disciplinary boundaries, we share best practice and regional and global insights with the markets, its regulators and policy makers. ASrIA is also a founding member of the Global Sustainable Investment Alliance (GSIA).

About AIGCC

The Asia Investor Group on Climate Change (AIGCC) is an initiative set up by the Association for Sustainable & Responsible Investment in Asia (ASrIA) to create awareness among Asia's asset owners and financial institutions about the risks and opportunities associated with climate change and low-carbon investing. AIGCC provides capacity for investors to share best practice and to collaborate on investment activity, credit analysis, risk management, engagement and policy. With a strong international profile and significant network, including pension funds, sovereign wealth funds, insurance companies and fund managers, AIGCC provides representation for the Asian voice in the evolving global discussions on climate change and the transition to a greener economy. AIGCC also forms the Asian link in the Global Investor Coalition on Climate Change (GIC).

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Partners

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EXPLORING FINANCIAL POLICY AND REGULATORY BARRIERS TO PRIVATE CLIMATE FINANCE IN SOUTH-EAST ASIA

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EXPLORING FINANCIAL POLICY AND REGULATORY BARRIERS TO PRIVATE CLIMATE FINANCE IN SOUTH-EAST ASIA

Introduction

By 2050, greenhouse gas emissions in South-East Asia are set to triple (IEA, 2013), due to growth in energy consumption and predominantly coal and oil based technology roadmaps pursued by governments in the region. In comparison with the rest of the world, South-East Asian countries use three times the input of resources to generate one unit of GDP (UNEP/UNESCAP/ADB, 2012). This development reflects a regional trend that industrial production has increasingly shifted from more efficient centers of production, such as Japan, to more resource-intensive production centers including Indonesia, the Philippines and Vietnam, and other lower income countries in the region (UNEP/UNESCAP/ADB, 2012).

South-East Asian leaders face a long list of environmental challenges, but policymakers, civil society and industry have increasingly recognized that transitioning to ‘green economies’ is not only critical from the perspective of environmental protection, but also that ‘green growth’ can be a significant opportunity for economic growth.

With varying levels of economic development and a diversity of political conditions, South-East Asian countries have begun to implement ‘green growth strategies.’ Public and private finance flows need to be channeled towards climate change mitigation and adaptation investment needs, complementing other green growth considerations, such as technology development, energy security, or domestic energy resource exploitation. In order to achieve this, it is crucial to provide more conducive policy and regulatory frameworks. However, it has been observed that financial policy and regulatory barriers exist that can hinder much-needed capital flows.

A number of stakeholders are seeking to leverage green growth strategies, to reach macroeconomic and societal goals, and engage in profitable business. From early movers such as project developers, to essential intermediaries such as banks, and top-down leaders such as regulators, many stakeholders are increasingly engaged in market building activities.

Through experience however, many actors have encountered numerous obstacles and challenges in financing projects, executing transactions and facilitating climate finance flows. This report aims to investigate some of these obstacles, with a

specific focus on financial policy and regulatory barriers, and the role that financial markets are playing in the overall landscape.

With a better understanding of where these barriers exist within financial markets - and related financial and industrial policy frameworks - steps can be taken to address them. In some instances, structural issues can be corrected and actions can be taken to foster more enabling environments that support the business case for climate-related and 'green' investments.

Purpose & Methodology

The purpose of this report is to summarize the main findings and insights gained from primary research undertaken in selected South-East Asian countries, specifically:

- Indonesia
- The Philippines
- Vietnam

Additional analysis, through secondary desk-based research only, has been included on the following countries:

- Malaysia
- Cambodia

The objective of the primary research was to identify and analyze existing and potential policy or regulatory barriers within the financial markets in the research countries that impact on private climate finance flows.

The report is based on primary research that involved interviews with finance industry practitioners from research countries, including bank executives, institutional investors, asset managers, financial market regulators, and civil society actors. Officials from governmental bodies were also interviewed, including central bank policy units, and ministries or departments responsible for environmental and natural resources, finance, energy, and industry. Interviews were conducted in Indonesia, Vietnam and the Philippines in November 2014 and January 2015. Interviews were not conducted for Malaysia and Cambodia research.

The research also consisted of supplementary desk-based review and analysis of existing literature and data, to investigate regional green growth strategies, climate finance policy, low-carbon and climate resilient investment activity, in addition to broader and contextual financial market developments.

This report focuses primarily on financial policy and regulatory barriers affecting the banking sector. The reason is that in most of South-East Asia, banks currently play a much larger role in the financial system than do non-bank financial institutions, such as pension funds or insurers, or capital markets actors, such as securities firms or corporate fixed-income issuers. As a result, in these countries, banks also currently play a larger part in climate finance flows.

Insights into financial policy and regulatory barriers to private climate finance

This chapter identifies and analyzes three categories of barriers related to policy and regulatory frameworks:

1. **Lack of policy consistency and alignment**
2. **Potential liquidity issues in banking sectors**
3. **Structural barriers to climate finance innovation in financial markets**

1. Lack of policy consistency and alignment

Increasing private climate finance flows requires more than the announcement and promise of national green growth policy strategies. Building investor confidence needs clear, consistent and well-aligned policies over a long period of time. Industry, finance and other core ministries must also play leading roles in establishing a robust policy environment that ensures alignment across all policy objectives.

However, such policies are currently lacking in the countries studied. Challenges include industrial policy that is inconsistent with green growth policy, financial regulation that inadvertently discourages green growth in trying to protect asset quality or limit exposure to specific sectors, and low investor confidence due to weak institutional and governance capacity.

Since many countries' green growth policies have focused on renewable energy capacity additions, inconsistent or misaligned policy can tangibly undermine industry and policymakers' progress.

1a. Lack of policy and regulatory consistency and conflicting financial regulations undermines progress, specifically towards renewable energy targets in the Philippines.

In 2008, the Philippines Congress passed the Renewable Energy Act - an ambitious piece of legislation aiming to add 10 GW of renewable energy capacity to the Philippines by 2023. The Renewable Energy Act established the National Renewable Energy Board (NREB) and a suite of public support instruments to encourage RE project development, such as the feed-in-tariff (FiT), the renewable energy portfolio standards and net-metering rules.

However, by mid-2014, just a fraction of the targeted 10 GW of renewable energy capacity had been committed. There are two reasons for this shortfall.

First, inconsistencies in the way the feed-in tariff has been implemented has made the investment environment more challenging for smaller, independent project developers, undermining overall investor confidence. Smaller players are important enablers for hundreds of potential projects across the Philippines' distributed generation landscape, but typically

have less access to equity or balance sheet finance. For example, according to research by Lehmann (2014):

- The rates for the feed-in tariff were not set until 2012, four years after the Renewable Energy Act had been approved. They were also set at much lower levels than expected. This substantially undermined investor confidence in the Department of Energy as a policy setter.
- The feed-in tariff scheme requires projects to have 80% of construction complete before being eligible for a power purchase agreement (PPA). This has meant that developers need to finance construction with equity, since securing project finance without a PPA is close to impossible. This has added substantially to construction risks, making the feed-in tariff unattractive to investors.
- Remote and off-grid projects were discouraged by the Renewable Energy Act, which specifies that priority must be given to projects that directly connect to the national grid, with the objective of stabilizing power in highly urbanized areas first. However, this substantially reduced the number of eligible projects (Bakhtyar et al. 2013), despite potential benefits to rural development.
- The current feed-in tariff scheme ends in 2015 and no clarity is being provided on a new scheme.
- The installation target set by the Philippines' Department of Energy (DOE) was not consistent with the Philippines Energy Plan target. The DOE installation target for 2013 – 2015 was set a low level of 830 MW for RE capacity. (ERC 2012)

Second, conflicting borrowing limits set for sound macro prudential reasons by the Philippine central bank may have an unintended consequence on the ability of the large domestic diversified conglomerates to finance large-scale renewable energy projects. Some ten diversified conglomerates, including San Miguel, Metro Pacific and DMCI Holdings, dominate the Philippines economy. (San Miguel's output was equivalent to 6.5% of GDP in 2014 (Reuters, 2013). These conglomerates are the most suited enablers to develop and finance the large geothermal and wind farms planned under the Philippines Energy Plan. But interviews with senior credit department executives at major Philippine commercial banks confirmed that these conglomerates are close to their borrowing limits. Because of the conglomerates' outsized dominance of the Philippines economy, the country's central bank, Bangko Sentral ng Pilipinas (BSP), has set borrowing limits designed to limit a bank's risk and possible losses in case of a major corporate default.

For example:

- The Single Borrower Limit (SBL) caps any bank's or financial institution's exposure to a single borrower to 25% of its net worth.
- Real-estate lending by banks is currently capped at 20% of total outstanding loans. Since any borrowing by a real estate company is categorized as "real estate," even if the use of funds are energy efficiency improvements or roof-top solar electricity installations, and many conglomerates already have substantial real estate holdings (IMF, 2013), this presents a significant barrier for conglomerates' real estate companies that have reached such borrowing limits.

However, the Bangko Sentral ng Pilipinas (BSP) has notably twice amended the SBL to encourage investment activity in specific sectors. In 2010, BSP established a separate cap at 25% to encourage diversified conglomerates to bankroll priority infrastructure projects under the PPP program. Later in 2011, BSP carved out an additional category to extend the cap by 15%, specifically to support domestic oil importation companies. The SBL relaxation measure targeting the oil industry has since expired, and the separate SBL for PPP projects has been extended, due to expire in December 2016. (SyCip Salazar Hernandez & Gatmaitan, 2011) (Government of the Philippines, 2012) This factor will push companies to seek market funding, presenting an opportunity for expanding corporate bond financing markets, particularly in infrastructure.

Currently, without targeted policy action to align SBL rules with the Philippines' green growth ambitions and renewable energy targets, these two borrowing caps are affecting the ability of domestic diversified conglomerates to make use of balance sheet debt finance for renewable energy, real estate energy efficiency or green building projects, particularly larger ones. The situation in the Philippines provides a strong example of where a lack of policy alignment across government can result in, albeit unintended, consequences for key sectors in the low-carbon landscape.

Across South-East Asia, existing inter-ministerial or departmental climate change commissions could provide platforms for dialogue and review of barriers, towards recommending solutions and reform to improve alignment of financial sector policies, industrial policies and climate and energy policies. *Box 1. Green Growth Strategies in South-East Asia*, below, outlines existing national 'green growth strategies' in Vietnam, the Philippines and Cambodia.

Box 1. Green Growth Strategies in South-East Asia

National 'green growth' strategies and climate change frameworks are providing context for supporting investment environments, and signal that governments account for climate related issues in policymaking. Examples of national frameworks include:

- In Vietnam in 2012, the government introduced its Green Growth Strategy, with the objective of fostering a shift towards green growth across the economy, conducting research to identify appropriate solutions for climate change adaptation, and boosting national living standards. In total, 12 tasks with 66 activities are outlined. (Government of Vietnam, 2012) Complimentary strategies include the National Green Growth Strategy and the National Action Plan on Green Growth (2014-2020). (Voice of Vietnam, 2015)
- In the Philippines, key long-term strategies and guidance for investors include the Medium-Term Philippines Development Plan (2011-2016) and the long-term National Climate Change Action Plan (NCCAP) 2011-2028. At the energy sector level, the Philippines' National Renewable Energy Program (NREP) charts out plans to scale renewable energy generation capacity to 15,304 MW. (Government of the Philippines, 2011)
- In Cambodia in 2010, the government adopted the National Green Growth Roadmap and in 2013, the National Green Growth Council launched the Cambodia Climate Change Strategic Plan 2014 – 2023 (CCCSP). This three-phase plan was the first comprehensive mapping of a climate change strategy for Cambodia. Primary focus will be given to mitigation activities, which are complimented by institutional capacity building in preparation for launching structured adaptation projects. The third phase (2019-2023) will focus on pilot projects and further capacity building activities to catalyze the development of climate finance investment opportunities. (Government of Cambodia, National Climate Change Committee, 2013)

1b. Overlapping and unclear institutional mandates and weak legal frameworks hamper growth in Vietnam.

Multiple overlapping government bodies currently oversee the renewable energy industry in Vietnam¹ and there is no overarching renewable energy regulation. Existing renewable energy and energy efficiency legislation consists of:

- *Decree 102/2003/ND-CP* dated 3 September 2003 on energy savings and the efficient use of energy, first introduced a package energy-saving measures, aimed at industry and other large consumers of electricity; and
- *Decision 37/2011/QD-TT* dated 29 June 2011 (Government of Vietnam, 2011) providing a feed-in tariff mechanism to support the development of wind and biomass electricity projects in Vietnam.

Interviews with project developers and equity investors active in renewable electricity development frequently cited the lack of an overarching national

¹ Vietnam's Ministry of Industry and Trade (MoIT) monitors activities related to the energy sector in accordance with Decree 189/2007/ND-CP issued by the Prime Minister on 27 December 2007. It is responsible for the management of all types of energy industries, including renewables. It proposes laws, policies, development strategies and plans and submits them to the Prime Minister for approval; The MoIT is responsible for managing the state's stake in EVN. The Ministry of Finance coordinates taxes and tariffs in all industry sectors, including energy; The Ministry of Natural Resources and Environment aids in the research and development of energy and environmental protection policies; The Centre for Renewable Energy and Clean Development Mechanisms was founded in 2007. It operates under the Institute of Energy, which was established pursuant to a decision of the Ministry of Energy (which has since been merged with other governmental bodies to form the current MoIT).

renewable energy act or strategy as the primary reason for inefficient coordination among government agencies. Practitioners have noted that this results in increased complexity in project development, greater risk of uncertainty, and higher levels of perception of overall regulatory risk – ultimately burdening projects with higher return thresholds to compensate for risk.

The Government of Vietnam has sought to find ways to make infrastructure, and more specifically green infrastructure, investment attractive by mitigating these risks, without removing incentives to manage risk, principally through developing a public-private partnerships (PPP) regulatory framework and encouraging PPP activity.

Vietnam's PPP law has been piloted since 2010 and eventually took effect January 1st, 2015, aiming at a more efficient and transparent allocation of public funding and designed as a framework to leverage private capital (JSM, 2010). Yet projects to date have shown that regulatory components lagged significantly behind in implementation.

A major example of this is the flagship Hanoi Highway project, which was completed in 2009, while toll charges will only commence in 2019, (VietNamNet.Bridge, 2014) due to delays in land handovers from title holders to the project entity, stemming from the lack of legal provisions in the PPP framework.

Thus, PPPs are no universal remedy in Vietnam. While PPPs are useful mechanisms for leveraging private capital into large scale green infrastructure such as wind farms, private sector practitioners interviewed for this report specifically cited the country's public-private partnership (PPP) regime as an example of major implementation issues. Weak legal frameworks are still under development and institutional mandates can be unclear. Investors in Vietnam must factor in uncertainty and regulatory risk, as they patiently wait for components of the PPP framework to be introduced.

Attracting investments into infrastructure projects under the Vietnamese PPP scheme requires: clear institutional mandates and leadership, an overarching renewable energy act, supplemented by medium- and long-term activity plans (investment roadmaps), as well as standardized and efficient administrative procedures and standardized legal documents (contracts) where possible.

1c. Macro prudential risk management measures are misaligned with newer public support instruments, hampering project finance for large low-carbon energy and infrastructure projects in Indonesia.

Indonesia has strong but conservative prudential regulatory standards in place that were originally designed to strengthen the banking system's ability to respond to the crippling shocks posed by the 1997 Asian Financial Crisis. However, some regulatory measures aimed at improving banks' asset quality present barriers to project finance for low-carbon projects, according to interviews with several of Indonesia's largest commercial banks, as well as infrastructure fund managers experienced with project finance.

Under Bank Indonesia regulations, collateral requirements are driven by the banks' needs to reduce loss allowance by securing the loan.^{2 3} Corporate guarantees, pledged non-listed shares, and assigned receivables – even from high-quality off-take agreements -- are not classified as allowable collateral. Their value cannot be deducted from loss allowances, therefore a bank is not likely to give much importance to those types of security when it loans money to a borrower.

As a result, banks typically require additional collateral from investors' balance sheets, rendering many renewable energy project finance investments uneconomical or unattractive. Provide balance sheet guarantees as collateral is more expensive and less attractive, as it increases total capital at risk for developers and investors.

As further elaborated in Box 2 below, limited recourse project finance is a key tool to financing renewable electricity projects, but Indonesian banking regulation for enforcement of security interests in transactions continues to exclude certain types of collateral to reduce loss allowance.

In the context of Indonesia's conservative regime for securitization of project assets, stronger recourse is required and IRR hurdle rates are pushed upwards to accommodate banks' lower appetite to take risk and impacts on the banks' capital. As a result, private climate finance opportunities are often rendered uneconomical despite real economy incentives such as feed-in tariffs.

Box 2 - Limited recourse project finance: an essential tool for financiers

In response to higher perceived risks, the challenge of borrowers' limited credit histories, and relatively higher up-front investment costs associated with climate finance, project finance is a commonly used financing instrument for clean energy and green infrastructure investments worldwide.

Benefits include its structure as limited or non-recourse financing, where creditors have limited or no claims on sponsors' (equity investors) balance sheets, and rely heavily on rights to project assets and cash flow to secure debt repayments. As a multi-party financing structure, project finance also allows for an adequate risk allocation towards the party that can manage the risk best, which reduces the risk the financier has to absorb, creating a positive feedback loop towards capital regulations.

² Sufficient allowances must be established for possible losses (reserves) for several classifications ranging from 'pass' to 'loss'. The reserve for possible losses must be a minimum of one per cent of loans that are classified as 'pass', at least five per cent for 'special mention', 15 per cent for 'sub-standard', 50 per cent for 'doubtful', and 100 per cent for 'loss'. In such cases, the percentage is calculated after deduction of the value of allowable collateral. The higher the allowance, the more impact it has on the bank's capital.

³ BI Regulation No 7/2/PBI/2005 Regarding Assets Quality Ratings for Commercial Banks (20 January 2005), as it has been amended several times and last was amended by BI Regulation No 11/PBI/2009 and 14/15PBI/2012.

Box 3. Policy de-risking instruments

Policy de-risking instruments address and seek to remove the underlying barriers that are the root causes of investment risks. These instruments utilize policy and programmatic interventions to mitigate risk. (UNDP, 2014)

De-risking measures are typically categorized as:

- 1) policy, standard and guideline design
- 2) capacity building, and
- 3) awareness raising. (UNDP, 2014)

Policy de-risking instruments are important in overcoming a key challenge - higher financing costs. A result of higher technical, project, and country risks, particularly in emerging markets, and much more limited access to finance, higher financing costs can represent a significant barrier to investment for low-carbon and climate resilient opportunities. Targeted policy de-risking instruments can be effective in increasing finance flows by lowering barriers to investment. In the case of clean energy projects, for example, one approach to de-risking is to streamline permitting processes and procedures. (UNDP, 2014).

Interviews conducted for this report underscored the role of policy instruments that lower investment risk in mobilizing private capital. Experts commented that:

- Investors are facing a range of barriers and embedded risks related to unclear, inconsistent, or misaligned policies.
- Many of these risks increase financing costs, due to additional policy risk premiums which investors factor into their investments. (Angelia Ruskin University, 2011)
- Targeted measures are needed that can address these policy related risks, through redesigning and streamlining existing policies, or introducing new policies.

2. Liquidity issues in banking sectors in South-East Asia

2a. Basel III standards to regulate liquidity will have marginal impacts; technical and regulatory risks remain stronger factors in influencing investment decisions and loan pricing for renewable energy and low-carbon infrastructure.

Adoption of Basel III international banking standards through forthcoming macro prudential regulation will regulate banks' capital adequacy requirements and banks' liquidity stores. However, research suggests that Basel III's stricter requirements will have only a marginal impact on long-term lending for climate-related projects in South-East Asia. Bank liquidity in many South-East Asian countries is currently high, and banks' 'regulatory capital' is seemingly in plentiful supply.

Bank executives from credit departments responsible for renewable energy and low-carbon infrastructure loans frequently stated that technical and regulatory risks remain stronger factors in influencing investment decisions and loan pricing, compared with effects due to the cost of regulatory capital.

As signatories to the Basel convention, all research countries' banking systems are operating under Basel standards. *Box 4. South-*

East Asia's banking system's evolution with international banking regulatory standards, below, outlines each countries' current compliance and roadmap to adoption of Basel II or III standards.

Bangko Sentral ng Pilipinas (BSP) completed the adoption of the Basel III framework in January 2014. Forthcoming regulation in Indonesia, the Philippines and Malaysia will bring those countries in line with Basel III international banking standards by 2019, adding liquidity regulation to a suite of macro prudential requirements. Neither Basel I or Basel II included liquidity provisions.

Basel III standards affect banks' liquidity stores, principally through the Liquidity Coverage Ratio and Net Stable Funding Requirement:

- Future Basel III compliant laws to regulate banks' liquidity, by way of a Liquidity Coverage Ratio, will require banks to hold 100% liquidity cover against loans made to special purpose vehicles, which could create heightened risk for lenders that is likely to prompt higher interest rates.
- Additionally, the Net Stable Funding Requirement (NSFR) requires banks to show stable funding (such as customer deposits and equity capital) over the long term (one year) in approximate proportion to the liquidity profiles of its assets. In practice, banks will need to maintain funding of at least that long to back the loan. An 8-year senior debt loan (previously not uncommon for renewable electricity or fossil fuel power project financings) would tie up capital to match liabilities under that 8-year loan.
- **In US markets, where Basel III standards have been fully adopted, bank loan tenors have been shortened and interest rates have risen in the project finance market,** affecting the renewable electricity and infrastructure market. (Standard & Poor's: Ratings Direct, 2012).

Interviewees in Indonesia and the Philippines confirmed the expected effect of liquidity constraints resulting from Basel III compliant regulation governing banks' capital adequacies. In Indonesia, bank executives responded that constrained liquidity would reinforce a broader aversion to long-term assets (extending long-term debt), given heightened difficulty in matching short-term funding (deposits) with long-term assets (loans).

However, several bank executives in both Indonesia and the Philippines also noted that resulting reduced liquidity would not necessarily change or reduce their appetite to provide long-term debt for renewable electricity projects or green infrastructure. The common reasoning cited by interviewees was that 'regulatory capital' is an insignificant factor compared with technical risk or policy risk in influencing loan pricing or willingness to lend.

The Philippines and Indonesia's current high levels of bank liquidity within the banking systems may also be a contributing factor to the relative insignificance and 'cheapness' of regulatory capital.

In Vietnam, both private and public sector stakeholders could not comment on the effects of Basel III regulations. Only Basel II standards are in the process of being adopted. Policymakers and banking executives in Vietnam are currently more focused on stabilizing the banking system in the wake of the country's real estate market crash in 2012.⁴

Cambodia's banking system is the most nascent of research countries, but as a signatory to the Basel convention, it is currently operating under Basel I standards.

Box 4 – South-East Asia's banking system's evolution with international banking regulatory standards

- **The Philippines have adopted Basel III standards.** To improve banks' competitiveness and operating efficiencies, and maintain stability via capital enhancement and ensure long-term sustainable growth, BSP, the central bank, requires liquidity ratios above internationally required levels. (Bangko Sentral ng Pilipinas, 2012)
- **Vietnam's Central Bank (SBV) has committed to introducing Basel II compliance as part of its credit institution restructuring process (2011 – 2015).** (State Bank of Vietnam, 2014) 10 commercial banks have been chosen to pilot new governance standards to prepare the 2018 adoption across the banking system.
- **In Indonesia, in line with Bank Indonesia's full adoption of Basel III by 2019,** several new regulations [14/26 and 14/18] were introduced in 2013.
- **Bank Negara Malaysia (BNM), Malaysia's central bank, has commenced the gradual implementation of Basel III with the full adoption expected in 2019.** The process will entail improving the quality of capital and raising minimum capital requirements as well as introducing a leverage ratio, which will be binding starting 2018. (Bank Negara Malaysia, 2012)
- **Cambodia's banking system is the most nascent of the research countries, but as a signatory to the Basel convention, it is currently operating under Basel I standards. Banking operations and products are simple and most of the risk management requirements provisioned by Basel II are not applicable to the Cambodian banking structure.** Up to now the National Bank of Cambodia has focused on the 25 Basel Core Principles for efficient banking regulation and supervision in a progress to overcoming hurdles such as limited capacity, tools and the bureaucratic efforts connected with a blanket rollout of a regulatory framework. (South East Asian Central Banks (SEACEN) Research and Training Centre, 2012). A clear adoption of Basel II is therefore not evident, but specific measures suited to the local context have been put in place such as a higher solvency ratio and a risk-based supervision approach. (Reyes, 2014)

⁴ The rate of Non Performing Loans is officially stated as 4.84% by the State Bank of Vietnam as of June 2014 (State Bank of Vietnam, 2014), but private sector stakeholders interviewed for this report, including asset managers and securities firms, estimates the rate of NPLs as between 10-15%.

2b. Short-term funding challenges can result in banks' aversion to long-term assets, including renewable electricity and green infrastructure assets. However, Philippines and Indonesian policymakers and banking executives, in particular, are relatively unconcerned given current high levels of liquidity in their banking systems.

Post-Global Financial Crisis, Asian banks – particularly in Indonesia and the Philippines – have not faced urgent needs to deleverage for better management of capital and liquidity. (Choudhry, 2014) Instead, South-East Asia's emerging banking systems face a major challenge in how future funding is developed, not least in order to avoid worsening existing funding gaps driven by strong economic growth and demand for credit.

Wholesale funding sources, including brokered deposits, borrowings in the public debt markets and securitization of loans, are essential to expanding banks' funding bases and improving liquidity. But domestic long-term wholesale-funding markets are essentially unavailable or largely nonexistent (as is the case for many developing economies), and funding gaps are likely to be compounded by high asset growth and continuing heavy reliance on retail deposits. (McKinsey, 2013)

Bank executives interviewed in primary research countries – Indonesia, the Philippines and Vietnam – all confirmed that retail-deposit overhangs are in part used to refinance long-term commercial-lending activities and infrastructure, implying structural maturity mismatch and liquidity risk.

The Indonesian banking system may be affected by liquidity risks given high demand for credit and shallow wholesale funding markets, according to commercial bank executives interviewed for this research. Infrastructure projects, such as the Sunda Strait Bridge plan, valued at Rp200 trillion (US\$17 billion), one of 15 projects (out of 40 priority projects) recently approved for continuing development or construction (BAPPENAS, 2011) (Priatna, 2014), are creating substantial, continuing demand for long-term debt.

In the Philippines, banks have excess deposits to deploy, and because deposits are relatively cheap and stable funding source, loan growth will be easier to sustain. This environment has been conducive to beneficial terms for project developers - loan tenures since 2013 have regularly been 10-15 years, at relatively low interest rates.

However, Philippines bank executives confirmed that Basel III requirements for liquidity coverage ratios and net stable funding ratios may eventually pose additional liquidity constraints for banks. Interviewees at major Philippines banks also cited current low Loan-to-Deposit Ratios (LDR) levels, implying that regulatory support and capacity building for sustainable bank funding models are needed and that banks should diversify away from short-term deposits towards longer-term funds to improve overall liquidity.

Short-term funding challenges require regulatory action to develop wholesale funding markets, and enable banks to access them. Despite the combination of credit growth trends and increasing long-term assets, emerging market banks have limited capacity to tap wholesale markets for long-term funds more suited to climate finance opportunities.

Regulatory action is needed to correct this structural failure and help prepare regional banks for potential liquidity crunches, specifically to address maturity mismatches. Banking sector reform could increase its support of the real economy, by encouraging greater banking penetration and financial inclusion, by facilitating the modernization of regional banking systems, and improving efficiency and reducing interest rates.

Similarly, measures needed to foster climate flows are likely to contribute to a more resilient, productive financial system. For example, if development of wholesale funding markets and sustainable funding models for banking institutions were to be encouraged, in order to increase banks' capacities to lend to long-term assets, institutional and systemic liquidity would be increased.

If South-East Asian policymakers can align green growth goals with development of their financial systems, promising opportunities will arise to develop and market wholesale funding products that address climate finance needs, such as asset-backed securities that securitize loans for renewable energy and low-carbon infrastructure projects.

3. Structural barriers to climate finance innovation in financial markets

Structural issues in financial markets can lead to lack of competition, in some instances impeding innovation of new financial products and incentives to pursue climate finance opportunities.

Structural issues, such as segmentation and protectionist rules, can hamper incentives to private sector actors and impede innovation of new financial products. Heavy concentration in the banking sector and under participation of capital markets and non-banking financial institutions also limits the range of climate finance instruments as well as opportunities for exposure by institutional investors.

Capital markets, which can be major sources of funding for climate finance, remain small in South-East Asia. Capital markets across the research countries comprise only minor or very small percentages of their related financial sectors, with the exception of Malaysia, which has a more diversified financial system.

The share of financing activity in Malaysia between financial institutions and capital markets is almost equal, at 54% and 46% respectively. (International Monetary Fund, 2014). However, financing institutions – principally banks – in all other South-East

Asian research countries have at least 75% share of financing activity.

Underdevelopment of capital markets results in a number of missed opportunities, such as providing ‘growth companies’ with access to equity, or diversifying sources of funding for the financial system, in particular, deeper wholesale funding markets for the banking sector. Capital market reform is also needed to reinforce market integrity, principally through improving legal and accounting transparency.

Crucially, well-developed capital markets can provide institutional investors – both domestic and foreign – with opportunities to allocate climate finance flows to asset classes in accordance with portfolio needs. For example, an Indonesian pension fund manager interviewed for this report cited a greater interest in ‘green’ fixed income products than direct exposure to project owners or technology companies.

Market openness may be the overriding factor, given that the Philippines’ financial system is similarly over-concentrated in banking, its banking sector is highly liberalized and open to competition, both among domestic-owned institutions and foreign-owned institutions. By contrast, Indonesia and Vietnam’s banking sectors demonstrate structural issues that may be contributing factors that impede competitive behavior and forward looking initiatives to tap new customers and markets.

In Indonesia, while substantial moves have been made to ensure a recovery of the financial industry since the late 1990s, structural issues remain as a result of continuing market segmentation and preferential rights enjoyed by state owned banks and regional development banks.

- **Four state-owned banks and 26 regional development banks control approximately 50% of total assets**, owing in part to a segmented and protectionist market structure where such banks enjoy exclusive rights to deposits from the central government, state owned enterprises, and provincial governments. (Nasution, 2013)
- **Market segmentation and protectionist rules have resulted in a banking market where assets are concentrated in state-owned banks and regional development banks.** Furthermore, it has been observed in other developing markets in Asia and Africa that a segmented structure and protectionist rules fail to encourage banks to compete for market share, and impede product innovation efforts to tap new customers and markets (African Development Bank Group, 2013). As a result, bank loan penetration in Indonesia is among the lowest in Asia-Pacific, some 27.5% of GDP in 2010, (Koconegoro, 2011) demonstrating lower levels of contribution to the real economy.
- **In respect of mobilizing commercial debt for climate finance needs, in the context of Indonesia’s highly**

segmented banking sector, commercial banks lack economic incentives to pursue new, climate investment opportunities that are less familiar than providing finance to Indonesia's largest and/or state-owned enterprises.

The Philippine financial system also has a very strong concentration in banking – almost 80% of total assets in the financial system are held by banks (Bangko Sentral ng Pilipinas (BSP), 2014).

- **In contrast with Indonesia, the Philippines' banking sector is one of the most liberalized in South-East Asia, having recently signed into law Republic Act 10641 allowing full entry of foreign banks into the Philippines,** (Fajardo, 2014). The liberalization of the Philippine banking system, which was aimed at improving the efficiency of financial intermediation, has taken place gradually, spanning over 25 years in three distinct phases: reforms in the 1980s; reforms in mid-1990s; and reforms in 2000s. (Cook, 2011)
- **Philippines bank executives interviewed frequently cited examples of voluntary activity to develop 'green loan products' for climate related investments** – particularly renewable electricity project financing and energy efficiency related credit facilities.
- **Today, at least four Philippines commercial banks provide green energy financial products.** Pioneer Bank of the Philippines has been active in providing dedicated low-carbon financial products since 2009, and was joined in 2012-2013 by Banco de Oro Unibank, Inc., the Philippines' largest lender, China Banking Corporation and BPI-Globe, according to research conducted for this report.

By contrast, low-carbon lending in Indonesia is developing more slowly under heavy international development finance support. Both Bank Mandiri's and Indonesian Bank of Export and Import's low-carbon project lending are supported by credit lines from development finance institutions – L'Agence Française de Développement (AFD) and the Asian Development Bank respectively.

In order to support more innovation in climate finance, there is a need for a more open, competitive market environment. While all research countries show overconcentration in banking (except for Malaysia) the openness of the Philippines' banking system may explain why its banks are today more active in developing low-carbon financial products.

Box 5. Climate and Green Finance Innovation in Malaysia

While Malaysia's progress in introducing low-carbon finance instruments should be attributed to government leadership, the country's functioning, diverse financial markets have been well-positioned to scale up climate finance volumes as low-carbon sectors are de-risked. Malaysia has taken a comprehensive and nuanced approach by creating targeted programs and policy initiatives including:

- **Low-carbon financing efforts have been led by Green Technology Corporation** (also known as GreenTech Malaysia), first established by Prime Minister Datuk Seri Mohd Najib Razak in 2010, with close cooperation with Malaysian Debt Ventures Bhd a government owned entity set up to develop specialized financial products, such as convertible debt structures for energy efficiency investments.
- **In 2010, Malaysian Debt Ventures established the Green Technology Financing Program (GTFS)**, adding to its offerings which include working capital, asset acquisition, project financing, trade financing, guarantees and venture capital financing schemes across both conventional and Islamic banking systems. The GTFS was introduced to support the development of green technology, and encourage access to finance towards Malaysia's sustainable growth objectives. The fund allows for a maximum tenor of 180 months, covering the lower of RM 50 million (USD 15 million) or 80% of cost (CGC, Credit Guarantee Corporation). As of June 2014, 21 projects were financed under the scheme totalling RM 346.3 million (USD 101.1 million). (CGC, 2014) It also extends guarantees for up to 60% of principal through the Credit Guarantee Corporation (Greentech Malaysia, 2012; National SME Development Council, 2012; Greentech Malaysia, 2013).
- **Bank Negara Malaysia (BNM), regards its introduction of green Sukuks (Sharia-compliant financial instruments) as a well-suited tool to finance green projects.** A minimum issue of RM 200 million (USD 58.4 million) is being targeted (Archibald, 2014) for the security that not only transfers debt ownership, like a traditional bond, but also asset ownership including inherent cash-flow payments and risks (Islamic Development Bank, 2010). It is reported that Malaysia's Ministry of Energy, Green Technology and Water also plans to set-up an Islamic Green Bank. Funded through international investments, initial proposals indicate that the bank may act as a venture capital fund (New Straits Times, 2014), supporting investor-project matchmaking and financial advisory services for SMEs. Supporters also intend for the institution to provide low cost capital for low-carbon projects (Archibald, 2014).

Box 6. Direct policy incentives

Incentive-based policies address externalities by altering the economic incentives private actors face. (Center for International Development, Harvard University, 2008)

Direct policy incentives are impactful measures for policy-makers to direct private finance flows to where it is most needed. Targeted mechanisms and tools typically focus on tax-based stimuli, financing schemes, and market building support. (Climate and Development Knowledge Network, 2014). The anticipated result is often more effective and lower-cost solutions, as private sector actors typically respond by creating innovative business models that leverage those incentives. In the context of this report, incentives are particularly important in mobilizing private climate finance flows, by altering the risk-return profile of climate-friendly investments and leveling the playing field between carbon intensive and low-carbon investments.

The majority of experts interviewed agreed that private sector actors are not sufficiently incentivized through direct policy initiatives.

- Experts interviewed identified that direct policy-driven incentives are important to providing support and assurance to investors that their investments will generate adequate returns in comparison with investment profiles for conventional technologies, particularly in the case of renewable versus fossil fuel energy projects.
- Although no interviews were conducted in Cambodia, interviewees familiar with the country market highlighted incentives for low-carbon investment opportunities remain very undeveloped. (Climate and Development Knowledge Network, 2014)
- Interview partners, however, also made clear that incentives alone are not enough to reduce barriers to private finance flows.
- Incentives must be embedded in stable, consistent and transparent policy frameworks to provide certainty to investors and enable them to make long-term investment decisions. (Asian Development Bank, 2013)

While direct policy incentives are very limited in the research countries, a number of promising initiatives have been put in place aimed at building market support. Examples include:

- In Malaysia, the Renewable Energy Act 2011 and the Sustainable Energy Development Authority Act 2011 established the Feed-in Tariff (FiT) for renewable energy, a fixed price that is paid for an agreed period of time by utilities for the electricity produced. (Sustainable Energy Development Authority of Malaysia (SEDA), 2009)
- In the Philippines, the legal framework for a Renewable Energy Trust Fund was enacted in 2008 and it is planned that the fund will be established in 2015. The intention is that the facility supports initial research and project development to overcome existing financing barriers and catalyze a market creation. (Flores, 2015)

Box 6. Direct policy incentives (cont.)

While direct policy incentives are very limited in the research countries, a number of promising initiatives have been put in place aimed at building market support. Examples include:

- In Malaysia, the Renewable Energy Act 2011 and the Sustainable Energy Development Authority Act 2011 established the Feed-in Tariff (FiT) for renewable energy, a fixed price that is paid for an agreed period of time by utilities for the electricity produced. (Sustainable Energy Development Authority of Malaysia (SEDA), 2009)
- In the Philippines, the legal framework for a Renewable Energy Trust Fund was enacted in 2008 and it is planned that the fund will be established in 2015. The intention is that the facility supports initial research and project development to overcome existing financing barriers and catalyze a market creation. (Flores, 2015)
- In 2010 the Cambodian government established the Cambodia Climate Change Alliance (CCCA). Structured as a Multi-donor Trust Fund, the USD11 million facility is anchored in the National Climate Change Committee and channels direct investments towards climate related pilot programs and capacity building initiatives. (Global Climate Change Alliance, 2009), (Ministry of Environment, Cambodia, 2013)

Incentives are important tools to channeling private finance flows to low-carbon and climate-resilient investment opportunities, such as renewable energy sectors. Although many stakeholders commented that some direct policy incentives hold promise, it was highlighted that while necessary, these are not sufficient to large-scale investment activity. To achieve this, policymakers need to develop sophisticated frameworks where incentives are embedded in broader packages of policy measures. (Asian Development Bank, 2013)

Concluding remarks

Green growth policies – that is, policy frameworks that drive the transition to a low-carbon, resource-efficient economy – are currently being implemented in many countries in South-East Asia.

This report finds that increasing private financial flows towards low-carbon infrastructure in South-East Asia will require on the following:

- Coordinated policy development across the financial, industrial, energy and other related sectors in service of national climate and green growth goals to streamline administrative processes and lower regulatory risk.
- Stronger capital markets that favor private investment more broadly.
- A more nuanced understanding of investor needs across all asset classes, project types and geographic markets to greater align financial sector policies, industrial policies and climate and energy policies.

This report examines some of the practical experiences of five countries in South-East Asia, Indonesia, Vietnam, the Philippines, Malaysia and Cambodia, in implementing the first generation of these policies, particularly as relates to the finance and investment needs to support these policies. It finds that potential financiers and investors in low-carbon infrastructure in South-East Asia currently face a number of barriers related to financial and industrial policy and regulation. Direct barriers to investment include borrowing limits or strict collateral requirements. Indirect barriers include inconsistent policies across industry and financial sectors, and structural factors in financial markets.

Barrier 1: Policies and regulations can be inconsistent or misaligned.

Green growth policies, many of which impact on or straddle a country's entire financial and real economy, require considerable inter-ministerial coordination by their very nature. If such coordination does not exist, green growth policies will struggle to be implemented effectively – and subsequently private investors may be reluctant to invest in low-carbon infrastructure and other green growth objectives.

Specific challenges include inconsistent renewable energy policy and feed-in-tariff rules (for example, in the Philippines), financial regulation that inadvertently discourages green growth in trying to protect asset quality (for example, in Indonesia) or limit exposure to specific sectors (for example, in the Philippines), and low investor confidence in weak institutional mandates (for example, in Vietnam).

The research finds that increasing private climate finance flows cannot be achieved through ambitious green growth frameworks or renewable energy targets alone. Ministries of industry, finance and other core economic sectors must also play leading roles in establishing a favorable policy environment. In particular, financial and industrial policy and regulation must be both consistent and harmonized with climate and environmental imperatives.

Specific recommendations to policymakers for achieving this alignment include:

- Consider implementing rules-based policy frameworks for climate policy as relates to renewable energy and other priority climate sectors, similar to European climate policy, which establishes targets and instruments that are transparent and clear to all and undergo periodic review.
- Empower existing inter-ministerial or departmental climate change commissions to examine opportunities and recommend solutions at the highest levels of government to greater align financial sector policies, industrial policies and climate and energy policies.
- Establish national-level dialogue platforms between government, public banks, commercial banks, project developers, financiers and investors to understand barriers and identify effective ways to remove them. Such platforms should aim to not only facilitate exchange of knowledge, but also serve as credible foundations for advocacy, by providing policy prescriptions for reforms and facilitating multi-stakeholder engagement.
- Vietnam: Establish a national framework for renewable energy policy and regulation, with clear institutional mandates and leadership supported by medium- and long-term investment plans. Meanwhile, develop standardized contracts and administrative procedures for public-private partnerships, currently the main vehicle for infrastructure investment in Vietnam.
- Indonesia: Relax collateral requirements for renewable energy financing.
- The Philippines: Relax Single Borrower Limit caps for renewable energy financing.

Barrier 2: Banks may experience a liquidity crunch in the near term.

Although Basel III capital requirements have become unexpected barriers to climate finance in Europe and the United States, research indicates that new liquidity provisions are not currently a major issue in South-East Asia in terms of climate finance flows. The combination of a conservative banking culture and conservative macro prudential regulation established after the Asian financial crisis of the late 1990s means that South-East Asian banks are adopting Basel III with ease, and most banking systems are highly liquid.

Instead, interviewees stated that technical and regulatory risks, such as long term performance of technology, fuel supply security, or consistency of feed-in-tariff regimes, are much stronger factors in investment and lending decisions in South-East Asia than are liquidity concerns.

However, there is strong potential for a credit crunch in South-East Asia, according to research by McKinsey (McKinsey, 2013). Infrastructure projects are creating substantial, continuing demand for long-term debt, but South-East Asian banks are funded largely through short-term retail deposits and currently lack access to wholesale funding markets. This demand for long-term debt may soon exceed the ability of South-East Asian banks to fund such debt through retail deposits alone. This is a major structural issue that may discourage future lending to renewable electricity and green infrastructure projects.

With this in mind, this report recommends that policymakers:

- Provide regulatory support and capacity building for sustainable bank funding models that enable South-East Asian banks to diversify away from short-term deposits towards longer-term funds. For example, stronger mandates for balance sheet transparency is a requisite step for banks to access wholesale funding markets. Financial regulators also need clear, impactful powers of enforcement to sanction capital markets actors, to support investor confidence in public equity and debt markets.
- In particular, establish support for wholesale funding products that address low-carbon investment needs, in particular, asset-backed securities that securitize loans for renewable energy.

Barrier 3: The structure of emerging South-East Asian financial markets can limit access to, or pose barriers to innovation in, climate finance.

First, banks play a disproportionately large role in the financial systems of each of the countries researched for this report, other than Malaysia. This is a challenge for climate finance because capital markets and non-bank financial institutions, such as pension funds, are major sources of climate finance in other countries but highly

under-represented in Indonesia, Vietnam, the Philippines and Cambodia.

Second, a lack of competition and a resulting lack of climate finance innovation in the banking sector is a challenge specific to Indonesia, where protectionist market segmentation has concentrated assets in state-owned and regional development banks. This segmentation means that Indonesian commercial banks favor lending to the country's largest or state-owned enterprises, and lack incentives to pursue new and unfamiliar climate investment opportunities. In contrast, Philippine banks, where the sector is highly liberalized, are developing 'green loan products' and other climate finance innovations.

With this in mind, this report recommends that policymakers:

- Continue to develop capital markets, to diversify funding sources and to provide institutional investors – both domestic and foreign – with opportunities to allocate climate finance flows to asset classes in accordance with portfolio needs.

Case studies in the region

Case Study in Indonesia - ICCTF

Case Study - The Indonesian Climate Change Trust Fund (ICCTF) is a promising facility to mobilize private sector investments for low-carbon and climate resilient investment opportunities

Background - The Indonesian Climate Change Trust Fund (ICCTF), was established in 2009 by the Minister of Development Planning⁵ (BAPPENAS). ICCTF's primary purpose is to channel international grants supporting Indonesia to achieve its climate change priorities and its emission reduction targets. Furthermore, Nationally Appropriate Mitigation Action (NAMA) pilot programs have focused on strengthening capacity and awareness, particularly amongst government agencies, with a view to assisting BAPPENAS in supporting the delivery and execution of the national climate change mitigation and adaptation plans, which requires policy, regulatory and governance reform across diverse institutions.

Key insights - According to senior executives interviewed for this report, mobilizing additional private capital is the next frontier of development for the fund.

- Indonesia has vast challenges ahead in terms of energy distribution and access to energy.
- Whilst Indonesia's regulation is progressive, it is often not enforced and thus creates an uncertain and riskier investment environment
- These risks require financial institutions that have the capability identify and execute suitable projects – only a small number of financial institutions possess such capabilities
- The limited experience is one reason for lacking finance for low-carbon and climate resilient projects in Indonesia.

Next steps and opportunities

As of March 2014, some companies that participated in an ICCTF-Ministry of Industry program, to utilize energy usage audit data to develop and implement energy efficient practices, were considering adopting the guidelines as part of planned upgrades to their facilities, in order to realize the potential efficiency gains from implementing these measures. (Halimanjaya, 2014)

Interviews conducted for this report have indicated that extensive regulatory risks, among other risk factors, discourage greater investment activity in low-carbon and climate resilient opportunities, in particular, immediate renewable electricity and energy efficiency project opportunities. ICCTF has the potential to 'de-risk' these sectors in the Indonesian context and help scale-up private finance flows. To achieve this, the ICCTF is exploring several options, through direct and indirect investments, including:

⁵ Through two Ministerial Decrees: No. KEP. 44/M.PPN/HK/09/2009 No. KEP. 59/M.PPN/HK/09/2010

- Initiating partnerships and co-operations with financial institutions.
- Working directly with financial institutions to create a one-stop-financing facility to offer grant funding, mezzanine, equity and loans.
- Supporting the development of low-carbon or climate resilient projects to meet private sector investment requirements.
- Supporting financial institution capacity building, by identifying projects, funding feasibility studies and creating project pipelines for Special Purpose Vehicles.
- Providing services related to monitoring, evaluation and verification of GHG emission reduction or other 'green attribute' project activity.

The intersection between ICCTF's business model and requirements of private sector investors seem mainly related to risks and cost of capital, which both can be lowered through the ICCTF's activities. This is a significant opportunity for regulators to mobilize the investment required to meet national emission reduction targets.

Case Study in Vietnam - Overcoming regulatory barriers in an immature market through public-private cooperation

Background - Vietnam's financial markets and policy frameworks are still immature and underdeveloped. For example, products such as Exchange Traded Funds (ETFs) or Real Estate Investment Trusts (REITs) are very new to the market, and hedging activities cannot be practiced, in absence of a derivatives market which will not be launched until at least 2016. Mutual funds and ETFs are operating at losses due to lack of market scale – 70% of the US\$55bn market is focused on local trading. Furthermore, market actors and regulators are still building capacity and competencies to make conclude transactions more efficiently, particularly for larger deal sizes that attract international investors.

Key insights - Interviews with senior experts from SSI Asset Management (SSIAM) illustrated how cooperation between private sector actors and policy-makers can be instrumental to guiding policymaking and rule-setting in an immature market. Examples of best practice include:

- Hand-holding and personal relationships with main actors such as the Vietnam Securities Depository (VSD), the stock exchanges and State Securities Commission of Vietnam (SSC) are important.
- Regular cross-checks with regulators are critical to foster in-depth dialogue and receive continuous updates on new initiatives and programs.
- SSIAM also looks internationally for examples of best practice on policies, procedures or guidelines that could then be replicated in Vietnam.
- Encouraging education for regulators and investors as well as basic capacity building are seen as effective ways to support innovation among policy-makers.
- A recent example is SSIAM's launch of Vietnam's first ETF, the asset manager worked closely with all stakeholders to increase awareness, ensure understanding of this innovative product and develop a suitable regulatory framework.

Next steps and opportunities - Continuous communication with regulators continues to be a key success factor to overcoming regulatory barriers in an immature market. Patience and hand-holding are crucial to developing conducive policy that then allows for 'leapfrogging' through innovation and product development. SSIAM has proven that it is possible to 'make the market' by encouraging and supporting education of both investors and regulators.

About SSI Asset Management - SSI Asset Management (SSIAM) is owned by Saigon Securities Inc, but was established in 2007 as a separate entity. As of end 2014, SSIAM has approximately US\$200 million in assets under management from domestic and international investors. With about 32% market share of international investors and 12-13% of the total market, Saigon Securities Inc is the largest securities firm in Vietnam by market capitalization and revenue.

Case Study in the Philippines - Public-private partnerships as a de-risking measure to mobilize private sector investment

Background - The Philippines are prone to natural disasters, but public funds dedicated to climate change related financing are limited to a small percentage of government budgets, insufficient to financing new infrastructure or climate-proofing existing infrastructure. Public-private partnerships (PPPs) are a proven tool to introducing private finance flows to overcoming infrastructure financing gaps, mobilizing private investment, and responding to immediate financing needs. Infrastructure investment is an important contributing factor for economic growth, thus it is also important that a national policy framework be specifically developed to facilitate PPPs.

Key insights - Interview partners have confirmed that public-private partnerships are important vehicles to lower risk for investors and thus attract more private finance for low-carbon and climate resilient investments, including renewable electricity projects and 'green infrastructure. A notable example from the electricity sector is the Operation and Maintenance of Angat Hydro-Electric Power Plant (AHEPP) Auxiliary Turbines 4 and 5.

- Initial investment costs for infrastructure projects are very high and public-private partnerships (PPPs) can be powerful vehicles to mobilize private sector finance.
- PPPs have also been referenced as efficient vehicles to improve the risk-return profile of low-carbon investments and to shift the risks to the partner best positioned to manage them.
- Private sector stakeholders have commercial incentives to allocate resources to their most productive use, requiring more economically viable business models.
- Such vehicles can also lead to lower financing costs and more efficient execution compared to a project developed and implemented by public or private stakeholders only.

Next steps and opportunities - Public-private partnerships are seen as an important part of the solution to mobilize sufficient private sector finance to meet national emission reduction targets and respond to imminent investment needs as relates to basic infrastructure, for example. Identifying adequate policy measures to facilitate public-private partnerships is an important task for policy-makers. Working with the private sector to understand investors' risk-return appetite is a first step to develop a conducive environment that benefits both public and private stakeholders.

Appendix 1: Country Snapshots

Country Name	Indonesia				
Population	249.9 million ¹		Per capita:		
GDP	868 billion (2013) ¹	USD	Average income	3109 (2012) ¹	USD
Total GHG emissions	434 (2010) ¹	Megatons CO ₂	GHG emissions	1.8 (2010) ¹	Metric tons CO ₂
National Climate Change Targets	26% reduction in GHG emissions below the “Business-as-Usual” by 2020 ²				
National climate policies and initiatives					
National Action Plan on GHG Emission Reduction (RAN-GRK) (2011) - framework, defining the country’s emission reduction goals for the power, industry and transportation sectors and national energy conservation policies ³					
Climate finance and finance regulation					
Regulation 2004 - demands that environmental assessment should be part of overall credit assessment ⁴					
Bank Indonesia Act 10/1998 - obligates banks to conduct environmental impact assessments for large or high risk loans ⁴					
Sustainable Finance Regulation Framework (planned) - sustainable finance definitions, guidelines, sectorial guidelines, reporting and information, and incentives and disincentives ⁴					

Sources

¹ World Development Indicators, The World Bank

² BAPPENAS 2011, Guideline for Implementing Green House Gas Emission Reduction Action Plan. Ministry of National Development Planning/ National Development Planning Agency. Jakarta: Government of Indonesia

³ Ampri, Dr. Irfan, Mainstreaming Green Financing in National Budget and Plans, April 2013

⁴ <http://bit.ly/1MxbN00>

Country Name	Vietnam				
Population	89.7 million ¹		Per capita:		
GDP	171 billion (2013) ¹	USD	Average income	1372 (2012) ¹	USD
Total GHG emissions	150 (2010) ¹	Megatons CO ₂	GHG emissions	1.7 (2010) ¹	Metric tons CO ₂
National Climate Change Targets	Reduce GHG at least 2-3% per year until 2030 ²				
National climate policies and initiatives					
National Green Growth Strategy - framework to foster a shift towards green growth across the economy, conduct research to identify appropriate solutions for climate change adaptation, and lift national living standards ³					
National Action Plan on Green Growth (2014-2020) - guidelines for a more sustainable development ³					
Vietnam Development Partnership Forum (VDPF) - platform for high-level dialogue between the government of Vietnam, its development partners, the private sector, and other organizations ⁴					
Climate Change Commission (CCC) (2009) - created as part of the Climate Change Act to ensure that climate change concerns are integrated in policy making and implementation ⁹					
Climate finance and finance regulation					
Environmental and Social Risk Management Guidelines (initiative of the State Bank of Vietnam (SBV) and the International Finance Corporation (IFC)) - voluntary framework to categorize and assess loans and investment activities with a focus on Environmental and Social risks ^{5 6 7 8}					

Sources

¹ World Development Indicators, The World Bank

² <http://bit.ly/18FEBUN>

³ <http://bit.ly/1MwzTGp>

⁴ <http://bit.ly/1GLiCKX>

⁵ <http://bit.ly/18h0h9V>

⁶ <http://bit.ly/1BB1YJI>

⁷ <http://bit.ly/1DdgESE>

⁸ <http://bit.ly/1BB22ZP>

⁹ <http://bit.ly/19fQEJP>

Country Name	The Philippines				
Population	98.4 million ¹		Per capita:		
GDP	272 billion (2013) ¹	USD	Average income	2743 (2012) ¹	USD
Total GHG emissions	82 (2010) ¹	Megatons CO ₂	GHG emissions	0.9 (2010) ¹	Metric tons CO ₂
National Climate Change Targets	No pledge ²				
National climate policies and initiatives					
National Climate Change Action Plan (2011-2028) (NCCAP) - policy framework to address climate change impacts ^{3,6}					
National Renewable Energy Program (NREP) - program to scale renewable energy generation capacity ³					
Climate Change Commission (CCC) (2009) - part of the Climate Change Act to ensure that climate change concerns are integrated in policy making and implementation ⁷					
Peoples Survival Fund (2012) - vehicle to enable local implementation of climate adaptation and mitigation measures ^{8,9}					
Multilateral Development Bank Classification system - scheme to identify, track, and monitor climate flows ⁵					
Climate finance and finance regulation					
Climate Finance Group - ad hoc group to answer imminent funding needs to mitigate climate change impacts ¹⁰					
Renewable Energy Trust Fund (2008) [legal framework has been enacted and it is planned that the fund will be established in 2015] - facility to support initial research and project development to overcome existing financing barriers and catalyze a market creation ^{11,4}					

Sources

¹ World Development Indicators, The World Bank

² <http://bit.ly/1F6uSUv>

³ <http://bit.ly/1CbzABI>

⁴ <http://bit.ly/1E9X9pb>

⁵ <http://bit.ly/1MxbN00>

⁶ <http://bit.ly/1MwAc45>

⁷ <http://bit.ly/1xiLulq>

⁸ <http://bit.ly/1Asm6K9>

⁹ <http://bit.ly/1CbzABI>

¹⁰ <http://bit.ly/18h0GJq>

¹¹ <http://bit.ly/1FhbLr6>

Country Name	Malaysia				
Population	29.7 million ¹		Per capita:		
GDP	313 billion (2013) ¹	USD	Average income	8027 (2012) ¹	USD
Total GHG emissions	217 (2010) ¹	Megatons CO ₂	GHG emissions	7.7 (2010) ¹	Metric tons CO ₂
National Climate Change Targets	Reduce carbon emission intensity of GDP by up to 40% per GDP by 2020 compared to 2005 level; Increase total renewable energy capacity to 2080 MW by 2020 and 4000 MW by 2030 from current installed capacity of 60 MW ²				
National climate policies and initiatives					
Renewable Energy Act (2011) and Sustainable Energy Development Authority Act (2011) - frameworks for the development of a Feed-In-Tariff for renewable energy ^{3,7,4}					
10 th (2011 – 2015) and 11 th (2016 – 2020) Malaysia Plan - commitment to developing a roadmap for climate-resilient growth for a transition to more inclusive development ^{5,6}					
Climate finance and finance regulation					
Malaysia Green Bank (2013) - USD100 million venture capital fund launched by Malaysia and Asia Energy Investments focuses on renewable energy technologies ³					

Sources

¹ World Development Indicators, The World Bank

² <http://bit.ly/1GLjob2>

³ <http://bit.ly/1Mxd4nP>

⁴ <http://bit.ly/1GLju2f>

⁵ <http://bit.ly/1FWkRaK>

⁶ <http://bit.ly/1Bbs8Pz>

⁷ <http://bit.ly/1DdhGOn>

⁸ <http://bit.ly/1MwApUM>

Country Name	Cambodia				
Population	15.1 million ¹		Per capita:		
GDP	15 billion (2013) ¹	USD	Average income	792 (2012) ¹	USD
Total GHG emissions	4 (2010) ¹	Megatons CO ₂	GHG emissions	0.3 (2010) ¹	Metric tons CO ₂
National Climate Change Targets	N/A ²				
National climate policies and initiatives					
National Adaptation Programme of Action to Climate Change (NAPA) - scoping study to assess climate change impacts, possible policy gaps and prioritize adaptation activities ⁴					
National Climate Change Committee (2006) - body to support the implementation of climate change mitigation actions and programmes [chaired by the Prime Minister since 2009] ⁷					
National Strategic Development Plan Update (2009 – 2013) - lists actions in response to climate change impacts such as capacity building, creation of a national climate change fund and the development of a national climate change strategy ⁵					
National Green Growth Roadmap (2010) - framework for sustainable growth with a focus on access to i.e. access to renewable energy ⁸					
Cambodia Climate Change Strategic Plan (2014 – 2023) - first comprehensive mapping of a climate change strategy for Cambodia. Primary focus will be given to mitigation activities, which are complimented by capacity building in preparation for launching structured adaptation projects ^{3,6}					
Climate finance and finance regulation					
Climate Change Financing Framework - plan covering possible financing mechanisms, actions and estimated costs; developed in the context of the Climate Change Strategic Plan (2014 – 2023) (CCCSP) ³					
Cambodia Climate Change Alliance (2010) (CCCA) - Multi-donor Trust Fund anchored in the National Climate Change Committee and channels direct investments towards climate related pilot programs and capacity building initiatives ³					

Sources

¹ World Development Indicators, The World Bank

² <http://bit.ly/1F6uSUv>

³ <http://bit.ly/1AiZzQS>

⁴ <http://bit.ly/1MwAyHU>

⁵ <http://bit.ly/1MwAyYk>

⁶ <http://bit.ly/1k99177>

⁷ <http://bit.ly/1xiM4j0>

⁸ <http://bit.ly/1b6Rucq>

Appendix 2: Limits of Scope

- In line with the broader research project, **the measurement of actual finance flows is not covered as this falls beyond the research scope. Therefore, the observations made and the conclusions drawn are based solely on the findings of the primary (through interviews) and secondary research**, and not on a quantitative measurement of finance flows.
- The coverage of stakeholders included in the interview process was limited by subjects' availability and willingness to participate, in addition to limits on time and resources. As such, this should be taken into account when reading the report.
- For the purposes of this project, the working definition of climate finance is broader than narrower definitions that incorporate the notion of 'additionality' which only consider investments beyond business-as-usual cases, and similarly, or even narrower definitions that only cover 'international climate flows that are additional.' **This project focuses on private climate finance flows. Research and analysis of public climate finance is out of scope**, and is only discussed in the context of understanding the relative nature and scale of private climate finance needs and flows.

Appendix 3: Glossary

Climate Finance

For the purposes of this project, the working definition of climate finance is broader than narrower definitions that incorporate the notion of ‘additionality’ which only consider investments beyond business-as-usual cases, and similarly, or even narrower definitions that only cover ‘international climate flows that are additional.’

This project focuses on private climate finance flows. Research and analysis of public climate finance is out of scope, and is only discussed in the context of understanding the relative nature and scale of private climate finance needs and flows.

This project employs a working definition of ‘climate finance’ that excludes ‘international climate finance,’ commonly defined as financial flows from developed to developing countries. Specifically, this working definition of climate finance refers to the flow of funds toward activities that mitigate greenhouse gas emissions or help society adapt to climate change’s impacts. Although this working definition accepts a broad taxonomy of climate change mitigation and adaptation opportunities, the research undertaken for this project indicates that the majority of existing and planned regulations, investment opportunities and climate finance flows focus on low-carbon infrastructure.

Basel: International banking regulations by the Basel Committee on Bank Supervision

Climate-resilient infrastructure: Infrastructure designed to withstand stress caused by climate change

Internal Rate of Return (IRR): Used in project finance as the discount rate that makes the net present value of all cash flows of a project equal to zero

Liquidity: Describes if an asset or security can be sold in the market

Liquidity Coverage Ratio: Part of the Basel set of regulations. Assets with high liquidity than can be sold to meet short-term obligations

Loan-to-Deposit ratio (LDR): is calculated by dividing a bank’s total loans to total deposits

Loan-to-GDP ratio: the ratio of a national total loans to the GDP

Loss allowance: Estimation on the amount of loans of a bank or company that cannot be recovered

Low-carbon: an economy with a minimal output of GHGs

Macroprudential regulation: aims to protect the financial system as whole from a breakdown

Minimum Capital Adequacy Ratio (CAR): a bank’s tier one plus tier two capital divided by its risk weighted assets

Net Interest Margin (NIM): Investment returns- interest expenses divided by the average earning assets

Net Stable Funding Requirement: part of the Basel III capital requirements, but not yet implemented. Proportion of long-term assets funded by long-term funding

Non-Performing Loan (NPL): a loan on which the debtor has not made a payment for 90 days

Prudential regulation: aims to limit the risk-taking of deposit-taking institutions to reduce the risk of a loss

Risk Weighted Assets: Used for the calculation of CARs, assets that are weighted by the risk of default

Appendix 4: Acronyms

FiT: Feed-In-Tariff

GDP: Gross Domestic Product

GHG: Greenhouse gas

IEA: International Energy Agency

NREB: National Renewable Energy Board Philippines

PPA: Power purchase agreement

PPP: Public-private partnership

REIT: Real estate investment trusts

SBL: Single Borrower Limits

YieldCos: Yield-oriented vehicles

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