



# ESTABLISHING NATIONAL GREEN BANKS

COULD ACCELERATE LOW-CARBON  
ECONOMIES AND FINANCING  
IN SOUTHEAST ASIA

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**FFC**  
GREENING THE  
FINANCIAL  
SYSTEM  
Accelerating green finance  
in emerging markets.

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# 1 INTRODUCTION

## SUSTAINABLE FINANCE GATHERS MOMENTUM IN SOUTHEAST ASIA AMID COVID-19

Commercial banks have in their response to the global pandemic, provided prudential forbearance to vulnerable sectors of the economy via payment moratoriums, late payment waivers and extension of working capital facilities and loans. Commercial banks acted quickly to activate business continuity plans to meet the banking needs of clients in critical times without compromising the safety of the workforce. This is sustainability in action.

Additionally, green financing efforts were diversified in 2020 because of the COVID-19 situation and economic support was provided for sectors hit hardest by the pandemic such as healthcare systems, micro and small-medium enterprises (MSMEs) and tourism. These industries are part of the financial value chain of commercial banks' sustainable finance and the global supply chain which was estimated at USD 3.1 trillion or \$210 billion annually from 2016 to 2030.

The pandemic has demonstrated the resilience of sustainable finance eligible projects such as renewable energy. In Southeast Asia countries like the Philippines, renewable energy power sources are “must dispatch” and do not need to import feedstock, unlike coal-fired power plants. Reduced electricity demand from the start of the Philippines' lockdown and the “must dispatch” status of renewable energy that requires the system operator to take whatever renewable power is offered, saw coal-fired baseload power plants having to greatly reduce their output.

Hard lockdowns or “enhanced community quarantine” only allowed public and private sector entities that provide essential services during the prescribed period. It also limited the number of employees going to work, slashing electricity demand. Figure 1 below shows the increase in renewable energy's share of generation in the Philippines before and during enhanced community quarantine (ECQ).

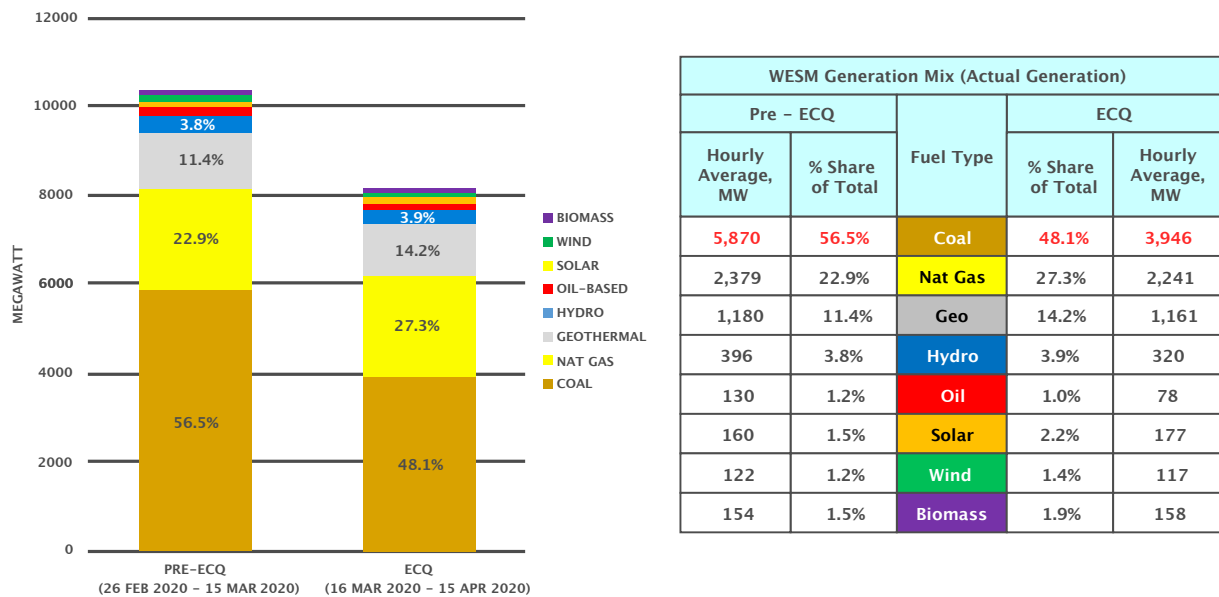
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<sup>1</sup> Lessons from Asian banks on their coronavirus response

<sup>2</sup> ADB.2017. Meeting Asia's Infrastructure Needs. Manila. February

<sup>3</sup> Covid-19, Coal and the Energy Transition in the Philippines

Figure 1. Generation mix before and after enhanced community quarantine



Source: Wholesale Electricity Spot Market (WESM) – Independent Electricity Market Operator of the Philippines (IEMOP) 2020.

Other Southeast Asian countries such as Indonesia, Vietnam and Bangladesh had experienced drop in commercial demand in electricity by 9.6%, 6.8% and 40% respectively during the economic lockdown. <sup>4</sup>

Enabling policies such as the Renewable Portfolio Standards<sup>5</sup> that require power distribution utilities, electric cooperatives, and retail electricity suppliers to source an agreed portion of the energy supply from renewable energy facilities and Green Energy Option Program (GEOP)<sup>6</sup> that provide the end-user the option to choose renewable energy sources as their source of energy aim to increase investments in clean energy space.

Renewable energy’s rise in share of the generation mix during the pandemic also presents a viable opportunity for Southeast Asia state-owned grid operators such as National Grid Corporation of the Philippines through a public private partnerships to accelerate investments in projects that will improve RE power transmission. The falling costs of solar panels and wind turbines create opportunities for commercial banks to finance bankable renewable energy projects and ancillary services. That will in turn support the achievement of Cop 21 Nationally Determined Contributions (NDC) and enhance progress towards a low-carbon economy.

<sup>4</sup> <https://stanleycenter.org/wp-content/uploads/2020/10/CCA-IEarlyFossilFuelDisplacementinSouthSEA1020.pdf>

<sup>5</sup> Consumer Guide Renewable Portfolio Standards

<sup>6</sup> Consumer Guide Green Energy Option Program

## 2 GREEN BANKS

### A GOVERNMENT-SUPPORTED SCHEME TO ACCELERATE COMMERCIAL BANKS' GREEN FINANCE PARTICIPATION IS IMPERATIVE

A green bank is defined by the OECD as a public, quasi-public, or non-profit entity established to facilitate private investment into domestic low-carbon and climate-resilient infrastructure.<sup>7</sup> The mission of a green bank is to address the climate crisis by adopting innovative financing and advisory activities to expedite transition to a low-carbon economy. A green bank can be a non-deposit financing corporation, it does not make grants but finances green projects and expects to be repaid, maximizing its contribution to a low-carbon economy.<sup>8</sup>

Green banks are generally capitalized with public funds provided by legislation, taxes or other contributions of public money into a special financing vehicle that is intended to be self-sustaining and to operate as a financial institution.<sup>9</sup> The primary role of green banks is to deploy limited public funds to crowd-in private sector capital that engages national green economy goals, market risks and opportunities.<sup>10</sup>

Green banks have been established at the national level in Australia, Japan, Malaysia, Switzerland, and the United Kingdom. At the U.S. state level California, Connecticut, Hawaii, New Jersey, New York, and Rhode Island have established green banks. A county-level green bank was created in Montgomery County, Maryland, while Masdar in the United Arab Emirates has a city-level green bank. Green bank structures vary depending on local conditions and the views of stakeholders such as government agencies that set the country's nationally determined contribution target, private sector investment preferences, and consumer needs.

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<sup>7</sup> <https://greenbanknetwork.org/what-is-a-green-bank-2/>

<sup>8</sup> <https://coalitionforgreencapital.com/what-is-a-green-bank/>

<sup>9</sup> [https://greenbanknetwork.org/wp-content/uploads/2016/11/Green\\_Investment\\_Bank\\_Model\\_Emerging\\_Markets.pdf](https://greenbanknetwork.org/wp-content/uploads/2016/11/Green_Investment_Bank_Model_Emerging_Markets.pdf)

<sup>10</sup> <https://www.nrdc.org/sites/default/files/india-financial-market-opportunities-green-bank-report.pdf>

## 3 ENVIRONMENTAL MANDATES SUPPORT GREEN FINANCE

### A DEDICATED MANDATE DIRECTS THAT ALL GREEN BANK FINANCING MUST FOCUS ON TRANSFORMATION OF THE FINANCIAL SUPPLY CHAIN

#### ○ MOBILIZING PRIVATE SECTOR INVESTMENT

Green banks deploy funds from development climate finance institutions and other capital providers that can act as a partner bank or investor in pro-environment projects such as renewable energy, energy efficiency, water and wastewater management, carbon capture and other clean technologies.<sup>11</sup>

#### ○ IMPLEMENTING NDCS AND SDGS

Green banks can provide a crucial catalyst in developing regions such as Southeast Asia by supporting national goals with finance for green projects. As government-led entities, green banks generally take an integrated approach involving public- and private-sector actors at national and municipal level to shrink the carbon footprint.<sup>12</sup>

#### ○ BUILDING UP TECHNICAL CAPACITY TO PURSUE CLIMATE-SOLUTIONS

Green banks help financial institutions to build internal expertise in green financing which includes technical assistance on management of climate finance funds and implementing impact metrics to assess progress.

#### ○ A FOCAL POINT FOR LOCAL INVESTMENT

A green bank can be a powerhouse for raising green finance because it is focused on targeting and funding local green projects with embedded technical expertise, which can mobilize local lenders to invest and participate in green financing.

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<sup>11</sup> <https://www.oecd.org/environment/cc/Green-Investment-Banks-POLICY-PERSPECTIVES-web.pdf>

<sup>12</sup> <https://www.greenfinancelac.org/resources/publications/supporting-national-development-banks-to-drive-investment-in-the-nationally-determined-contributions-of-brazil-mexico-and-chile/>

## ○ STRONG GOVERNANCE AND TRANSPARENCY PRINCIPLES

Green banks set disclosure standards on investments, metrics and impacts to align with national targets and to comply with the transparency requirements of climate finance investors.

## ○ CONDUCTIVE FUNCTION AS A FOCAL POINT FOR FOREIGN GREEN FINANCING

Green banks assist policymakers to create an enabling environment for foreign backers to invest in local low-carbon, climate-resilient projects that are technically and economically feasible. Innovative financing orchestrated by green banks tends to generate positive environmental impacts and social inclusivity by funding clean energy projects at the local and municipal level.

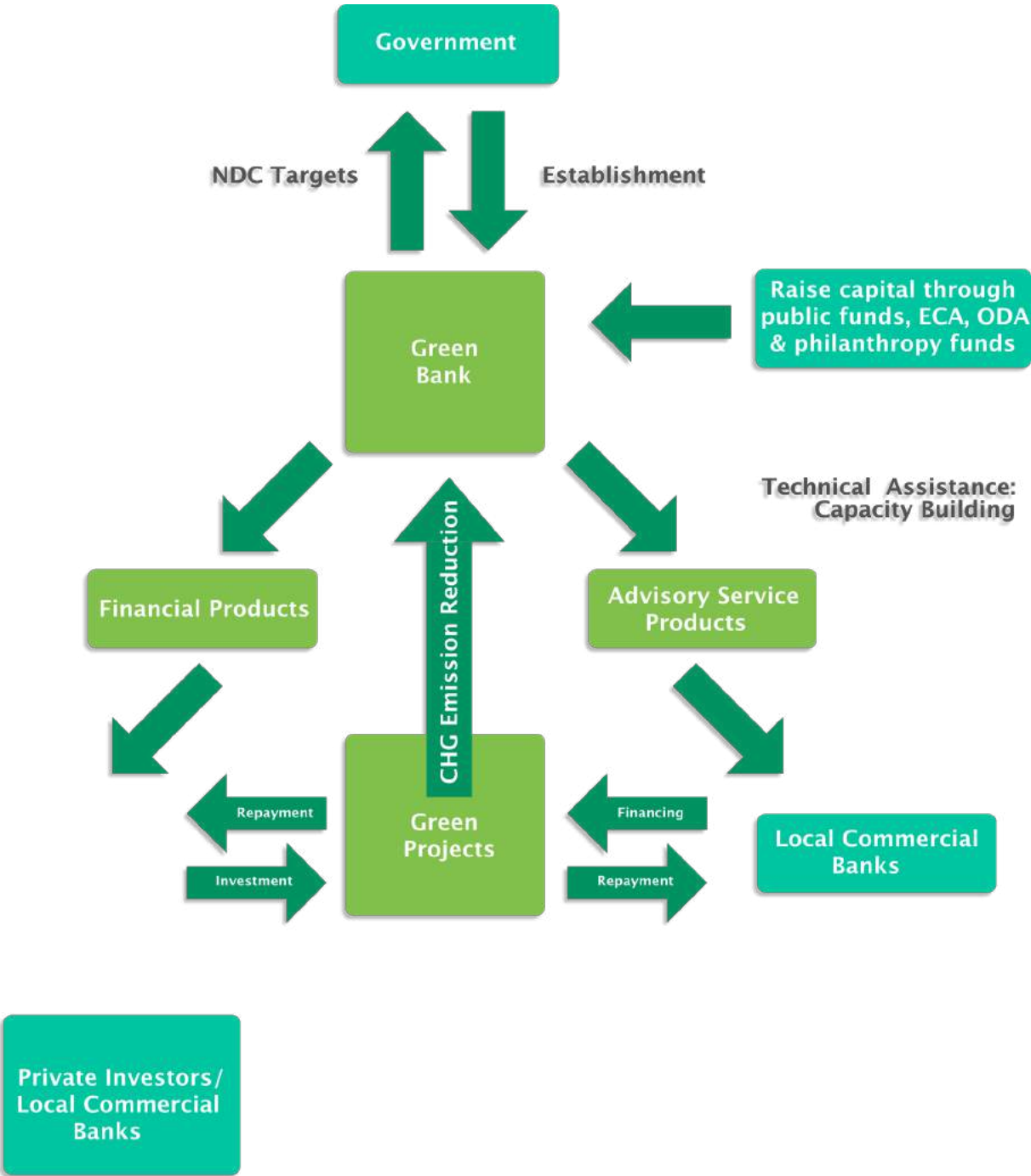
# 4 GREEN BANK PRODUCTS IN THE ASEAN REGION

## GREEN BANKS SUPPORT ACCELERATION OF GREEN FINANCING IN SOUTHEAST ASIA THROUGH THEIR FINANCIAL PRODUCTS AND ADVISORY SERVICES

A green bank can crowd-in private sector financial institutions to help finance green projects. But before providing such funds, local commercial banks and especially small- and medium-sized banks should acquire the necessary green financing capacity to offer technical assistance through advisory services. The green bank should, therefore, provide innovative financial products and advisory services simultaneously to attract private investors and private sector financial institutions.

Figure 2 below details the green bank products that would effectively accelerate green financing in developing and emerging markets in Southeast Asia.

Figure 2. Green Bank's Products: Financial Advisory Service





## 5 GREEN BANK'S FINANCIAL PRODUCT

### BOOSTING THE READINESS OF LOCAL FINANCIAL INSTITUTIONS TO FUND GREEN VENTURES

Green banks provide long-term, low-interest loans for project developers or consumers that are a challenge for commercial banks to provide because green bank capital is usually raised from public funds and climate finance. Green banks deploy a diverse set of financing techniques, including credit enhancements, co-investment, and securitization. Green banks encourage existing financial institutions to finance green loans and investment to scale up RE financing.

#### CREDIT ENHANCEMENT

Green banks facilitate risk mitigation and credit enhancements such as:

- **LOAN LOSS RESERVE STRUCTURES:**

Capital can be assigned to cover an agreed portion of lenders' losses. It can be a first or second loss provision to boost the willingness of local financial institutions to enter the green finance space.

- **RISK SHARING FACILITY:**

The green bank and participating commercial banks enter a bilateral loss-sharing agreement in which the green bank reimburses commercial banks for a portion of the principal losses incurred.

- **GUARANTY FACILITY:**

The green bank can provide customized guaranty facility to commercial banks depending on need.

#### CO-INVESTMENT OR CO-FINANCING

Green banks may provide senior debt, subordinated debt, or equity in a project over a longer tenor and with differentiated pricing structure to help mitigate and share risks in the investment.<sup>13</sup> A green bank can co-finance a blended loan with local commercial banks in which the green bank's loan is senior debt versus the commercial bank's loan as subordinated debt or vice versa.

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<sup>13</sup> [https://greenbanknetwork.org/wp-content/uploads/2016/11/Green\\_Investment\\_Bank\\_Model\\_Emerging\\_Markets.pdf](https://greenbanknetwork.org/wp-content/uploads/2016/11/Green_Investment_Bank_Model_Emerging_Markets.pdf)

## SECURITIZATION

The green bank can aggregate the financing of small- and medium-sized enterprises (SME) to provide accessible and affordable debt and working capital. The green bank can be an origination partner, selling a portfolio of assets to private investors either through a private placement of the loan book, a private securitization, or a public securitization. In this way public capital is replaced with private capital. The green bank can issue thematic bonds for different industries or purposes such as renewable energy, real estate, water and wastewater management, and support to MSMEs.

## 6 RATIONALE BEHIND GREEN BANKS' ADVISORY SERVICES

### BUILDING CAPACITY TO DETERMINE THE VIABILITY OF GREEN PROJECT PROPOSALS

A green bank can support private businesses, including financial institutions, that pursue sustainability by providing technical assistance, capacity building in renewable energy (RE) financing, RE development and environmental and social (E&S) safeguard practices. Regardless of project size or financing type, banks should have the capacity to accurately evaluate the viability of a green project. Moreover, such capacity would address the challenge of heavy upfront capital expenditure on RE projects.

#### ► PROJECT FINANCE WITH HEAVY UPFRONT CAPEX

RE development requires heavy upfront CAPEX especially during the pre-development and construction stage. RE projects usually include a stringent permitting process that involves convincing stakeholders ranging from host communities to senior government officials of clean energy's benefits, and can entail significant costs.

The type of financing a renewable energy venture needs depends on the project's scale. In the case of a scaled-up project, most financiers would prefer not to book the loan on the balance sheet because this would increase liabilities and could affect their credit ratings. Developers prefer to establish a special purpose vehicle (SPV) to raise project finance.

Financing an SPV for a specific venture creates high dependency on a bank loan that at times could equal more than 70% of the cost of the project. Banks put significant weight on a project's viability and cash flow to pay off the loan. Banks require the third-party due diligence into project finance, but also need to be equipped internally to validate that

third-party due diligence to the point where it is confident enough to lend. Most RE developments are financed by banks as project finance and non-recourse finance. This makes the bank's internal capacity to validate techno-financial viability absolutely crucial.

### ▶ RE FINANCING THROUGH WORKING CAPITAL

If project size is less scaled or an aggregated portfolio, commercial banks finance green projects through working capital that is booked on the corporation's balance sheet. In this case, the financed corporation uses the green loan to support a portfolio of projects such as aggregated rooftop solar installations. The end-users of solar installation will then pay the corporation a usage fee or enter a lessor-lessee arrangement. The bank is less exposed to a loan default as the loan is booked on the corporation's balance sheet.

### ▶ RE FINANCING WITH SECONDARY SECURITY

Another option is for the end-user of a solar project to borrow and offer the bank the security of the building and the photovoltaic array. The bank then has secondary security in the form of real estate and a chattel mortgage. The bank can deploy its technical expertise to advise clients on the project's feasibility.

## 7 GREEN BANK ADVISORY SERVICES

### TECHNICAL SUPPORT MOBILIZES PUBLIC AND PRIVATE CAPITAL

Renewable energy technology was introduced in Southeast Asia more than a decade ago, but policies that encouraged investment in RE were limited. RE technology has constantly evolved to compete with other energy sources on cost effectiveness, but it has also had to upgrade with new technology such as battery storage of power to resolve renewable energy's intermittence. Commercial banks recognize the benefits of clean energy but are also cautious to invest in the constantly changing world of renewable energy project financing.

#### ○ TECHNICAL ASSISTANCE

Technical assistance is an essential service to local commercial banks' green financing efforts, especially in RE development. Most banks are not familiar with RE technology and have limited financing experience in evaluating scaled-up RE development. Knowledge of RE technology is critical for banks to build their confidence in RE financing internally. Establishing a green bank as

a national institution to mobilize public and private capital for clean energy investment and providing technical assistance to commercial banks in Southeast Asia would be major step in the right direction.

## ○ CAPACITY BUILDING BY A TASK FORCE TEAM

Establishing a sustainable finance task force is crucial because it would serve as the primary team to build capacity across all bank business units in financing renewable energy projects. In developing countries, most of the time, a top-down approach is used to initiate new endeavors.

This makes top management’s commitment to sustainable finance integral to successfully instilling green finance skills among staff from senior executives to front liners in branches.

Ideally, the team would train bank officers and staff to handle client’s queries and how to advance due diligence. That would include identification of ESG risks and what documents to require from clients to mitigate potential risks. With ESG risks assessed, the team would also be in charge of reinforcing environmental and social (E&S) safeguards by implementing E&S risk categorization guidelines and developing policy. Additionally, assessment of emerging E&S issues such as transition and physical risk would be undertaken by the team.

The team would serve as the focal point for all sustainable finance engagement with both internal and external stakeholders. It would also disseminate relevant sustainability information in lending operations so as not to miss opportunities.

## Sustainable Finance Desk as Focal Point



## ○ CONDUIT FOR PARTNERSHIP BETWEEN CLIMATE FINANCE, MDBS AND LOCAL COMMERCIAL BANKS

Multilateral development banks and international development assistance (IDA) can catalyze support for developing countries, especially in Southeast Asia, to transition to low-carbon economies. Technical assistance agencies such as the German Agency for International Cooperation (GIZ) utilize IDA funds to run programs and training that will encourage donors, governments, and the private sector to promote policymaking and climate-resilient investment that achieve actual sustainable outcomes.<sup>14</sup>

## ○ TECHNICAL ASSISTANCE PARTNERSHIPS WITH CLIMATE FINANCE AND MULTILATERAL BANKS

Synergistic partnerships enhance the value chain. Technical assistance subsidies from partners can provide training to commercial banks that mobilize private capital to finance scaled-up renewable energy projects.

Partnership with international climate finance or multilateral banks can guide local commercial banks by cooperating to explore innovative financial structures. Empowered commercial banks could then promote sophisticated mechanisms such as thematic bonds, public-private partnership finance, cross-border loans, syndicated loans and incorporation of guaranty or insurance policies. In addition, partnership with international organization enhances local commercial banks' reputation because green financing practices are expected to be based on international E&S standards.

Commercial banks would need to conduct thorough due diligence before forging new alliances because success depends heavily on the competence, technical expertise, global experience, and reputations of prospective partners.

## ○ SUCCESSFUL PARTNERSHIPS IN SOUTHEAST ASIA

In 2008, the IFC partnered with the Bank of the Philippine Islands (BPI), the first in the Philippines to leverage the IFC's Sustainable Energy Finance Program to expand its financial products aimed at climate change mitigation and to raise awareness of the business case for renewable energy and energy efficiency. In 2007, BPI had already partnered with Kabang Kalikasan ng Pilipinas (World Wildlife Fund Philippines) to establish its Climate Savers' Program aimed at reducing its carbon footprint.<sup>15</sup>

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<sup>14</sup> <https://www.climatepolicyinitiative.org/publication/the-role-of-technical-assistance-in-mobilizing-climate-finance-insights-from-giz-programs-2/>

<sup>15</sup> <https://pressroom.ifc.org/all/pages/PressDetail.aspx?ID=23424>

In 2009, BPI signed a PHP5 billion (USD106 million) risk-sharing facility with the IFC to support greenfield sustainable energy projects.<sup>16</sup> With this partnership, IFC covered 50% of the risk sharing facility (RSF). The IFC then diversified its risk assumption<sup>17</sup> utilizing support from Global Environment Facility (GEF) and Clean Technology Fund (CTF) to assume first losses. This RSF allowed BPI to broaden its lending capacity to finance varied sustainable energy projects and achieve increased credit risk confidence. As of 2019, BPI had disbursed loans of PHP242.93 billion to projects that contributed to UN Sustainable Development Goals.<sup>18</sup>

BDO Unibank, Inc., the Philippines' largest bank, partnered with the IFC's Sustainable Energy Finance (SEF) program from 2010 to 2018. As of 2019, BDO was able to finance 2,168 MW of renewable energy projects using various types of technology. A total of PHP158.8 billion worth of sustainable finance eligible projects were funded.<sup>19</sup> The average project size under BDO's SEF program is around 20MW. Its projects range in capacity from 1MW to over 100 MW.

BDO embedded a technical team to validate the RE project's due diligence which was undertaken by the IFC's advisory service. Through this partnership with IFC, BDO issued the first green bond in the Philippines and East Asia Pacific, a landmark transaction for the in the country and the region.<sup>20</sup> The \$150 million bond's 'use of proceeds' funded a total 95MW of renewable energy projects, comprised of biomass (53 MW), two mini-hydro plants (27 MW), and one 15 MW wind installation. These projects are expected to reduce carbon dioxide emissions by more than 270,000 tons a year, equivalent to taking 57,800 passenger vehicles off the road and growing nearly 7 million trees for 10 years.

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<sup>16</sup> <https://pressroom.ifc.org/all/pages/PressDetail.aspx?ID=24175>

<sup>17</sup> Risk Assumption is an acknowledgment of the existence of a particular risk situation and a conscious decision to accept the associated level of risk, without engaging in any special efforts to control it. <https://financial-dictionary.thefreedictionary.com/Risk+Assumption>

<sup>18</sup> [https://www.bpi.com.ph/content/atom/33f50d91-c898-4666-8a69-e09d571c5dcc/content/About%20BPI/Investor%20Relations/Integrated%20Reports/IR%20Report%20Files/file\\_2019\\_integrated\\_report.pdf?id=deca4840-d2b3-4c65-a7b8-779f3cd8ef3d](https://www.bpi.com.ph/content/atom/33f50d91-c898-4666-8a69-e09d571c5dcc/content/About%20BPI/Investor%20Relations/Integrated%20Reports/IR%20Report%20Files/file_2019_integrated_report.pdf?id=deca4840-d2b3-4c65-a7b8-779f3cd8ef3d)

<sup>19</sup> BDO 2019 Sustainability Report

<sup>20</sup> [https://www.bdo.com.ph/sites/default/files/pdf/Press%20Release%20-%20BDO%20Issues%20First%20Green%20Bond%20for%20\\$150%20Million%20\(December%208,%202017\).pdf](https://www.bdo.com.ph/sites/default/files/pdf/Press%20Release%20-%20BDO%20Issues%20First%20Green%20Bond%20for%20$150%20Million%20(December%208,%202017).pdf)

In 2012, IFC with BNP Paribas provided \$25 million financing to Orient Commercial Joint Stock bank in Vietnam for lending to small-medium enterprises and women-owned and operated businesses. It was the first time IFC allocated funds for women entrepreneurs that aimed to provide equal access to finance.

Rizal Commercial Banking Corporation (RCBC) also adopted Social and Environmental Management System (SEMS) in 2012 when the IFC invested. Sharing its views on propelling the growth of small-medium enterprises, IFC lent \$30 million to RCBC to increase financing for women-led businesses, SMEs and Yolanda-affected enterprises. Additionally, IFC and RCBC continued partnership in 2015 for non-financial services to design strategies and products suited to SMEs. RCBC disclosed in its 2019 Sustainability Report funding of PHP30 billion to projects and loans that contribute to shrinking the country's environmental footprint and PHP10 billion to projects and loans that directly improve the living conditions of Filipinos.

## ○ USAID PARTNERSHIPS

In Indonesia and Cambodia, USAID Green Invest Asia had invested \$30 million in sustainable teak and rubber production which resulted in a reduction of nearly 8 million metric tons of carbon equivalent emissions. USAID Green Invest Asia provided technical assistance in land-use management for investors and banks. The program links the banks, investors, buyers and sustainable, low-emission, agricultural companies in the financial value chain. In the Philippines, USAID Development Credit Authority (DCA) Loan Portfolio Guarantee (LPG) program under the Partnership for Growth (PFG) implemented a 10-year \$95 million guarantee program that encourages

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<sup>21</sup> Creating a Vibrant Green Bond Market in the Philippines

<sup>22</sup> IFC Helps Increase Lending to Small Business and Women Entrepreneurs in Vietnam

<sup>23</sup> <https://www.rcbc.com/environmental-social-and-governance>

<sup>24</sup> On 8 November 2013, Super Typhoon Haiyan (known locally as Yolanda) swept across the Philippines affecting 16 million people. More than 28 000 were injured and 6 300 died. [https://www.who.int/westernpacific/emergencies/typhoon-haiyan-\(yolanda\)](https://www.who.int/westernpacific/emergencies/typhoon-haiyan-(yolanda))

<sup>25</sup> IFC anchors RCBC \$320 million bond issue

<sup>26</sup> <https://www.rcbc.com/uploads/media/06152020---RCBC-2019-Sustainability-Report.pdf>

<sup>27</sup> USAID Green Invest Asia

lending to SMEs, start-ups, and high-priority growth centers. The guarantee covers 50% of the qualified loans and comes with technical assistance to support participating banks and borrowers. Partner banks include Bank of the Philippine Islands, BPI Savings bank, Security Bank Corporation, Philippine Business Bank, Philippine Savings Bank and BPI Leasing.<sup>28</sup>

## 8 SUCCESSFUL BANK MODELS

### A GREEN BANK CAN DEVELOP PRODUCTS AND SERVICES FOCUSED ON GREEN PROJECTS IN COMMUNITIES THAT COMMERCIAL BANKS DO NOT OFFER

#### CONNECTICUT GREEN BANK

Connecticut Green Bank (CGB) was established in 2011 to support a strategy to promote clean and affordable sources of energy that would spur local economic growth and generate jobs.<sup>29</sup>

CGB uses limited public funds to attract private capital investment and local lenders to finance green energy projects that are accessible to consumers. The green bank model connects key actors in the supply chain such as public or concessional loan providers, private investors, policymakers, sustainable contractors, and consumers.

CGB has deployed capital of \$1.9 billion in clean energy projects since its inception. For every \$1 of public funds committed by the green bank an additional \$6 in private investment went into the state economy.

Connecticut Green bank created several financial products that address market barriers for retail consumers to source clean energy for their homes.

- Smart-E loans offers low-interest financing with flexible loan terms to improve domestic energy performance with no cash outlay at the onset<sup>30</sup>

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<sup>28</sup> <https://www.usaid.gov/philippines/partnership-growth-pfg/dca-lpg>

<sup>29</sup> <https://www.ctgreenbank.com/about-us/>

<sup>30</sup> <https://www.ctgreenbank.com/programs/homeowners/>



- C-PACE or Commercial Property Assessed Clean Energy, an innovative program that lets consumers pay for green energy improvements in their homes over time through a voluntary benefit assessment on their property tax bill
- Multifamily Housing provides technical assistance to assess a specific property or portfolio for smart energy upgrades and determines options and incentives that maximize return on investment.
- The Residential Solar Investment Program (RSIP) makes easy and affordable scheme for homeowners to own solar PV rooftop system through no upfront cost and provides performance-based incentives to Eligible Contractor and Eligible Third-party PV System Owner.<sup>31</sup>

## JAPAN'S GREEN FUND

Japan's Green Fund was established in 2013 by the Ministry of the Environment, driven primarily by the need to utilize private capital in building a low-carbon society. The Green Fund's capital source was a portion of the revenue raised by the Tax for Climate Change Mitigation, a carbon tax on fossil fuel consumption.

The Green Fund helps overcome the challenges of building clean energy projects with scaled upfront capital costs and long operational duration. The Green Fund provides equity and mezzanine investments to reduce debt-to-equity ratios to facilitate loan financing. The fund finances projects with business models that are replicable and engage with local communities.

As of 2018, Green Fund investment commitments to clean energy projects exceeded a billion U.S. dollars with expected carbon dioxide avoidance of a million tons per year.<sup>32</sup>

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<sup>31</sup> <https://www.ctgreenbank.com/programs/all-programs/>

<sup>32</sup> <https://greenbanknetwork.org/green-finance-organisation-japan/>



## MALAYSIAN GREEN TECHNOLOGY AND CLIMATE CHANGE CENTRE (MGTC)

MGTC is an agency in the Ministry of Environment and Water Malaysia delegated to lead the nation's funding of green technology ventures. The Green Technology Financing Scheme (GTFS) for institutional banks provides a loan guarantee scheme with a 2% rebate per year on interest or profit rates charged by financial institutions. It guarantees 60% of the green costs of the financed amount. GTFS was able to attract the participation of 29 banks and financial institutions to invest in green ventures.

After a decade in operation, this agency has supported 349 projects with total financing of \$1.04 billion in various sectors such as renewable energy, transport, waste, and water as well as manufacturing. Most projects are in renewable energy and are expected to reduce greenhouse gas emissions by more than 3.7 million tons a year.<sup>33</sup>

## NEW YORK GREEN BANK

NY Green Bank is a specialized financial entity within New York State Research and Development (NYSERDA) that works with the private sector to increase investment in the state of New York's clean energy markets.<sup>34</sup> It leverages private sector capital and invests at market rates to recover the organization's costs while preserving its capital base for mobilization. NY Green Bank uses credit enhancement and securitization to attract private capital.

NY Green Bank has invested more than \$1.2 billion in clean energy projects across New York State that include biomass, solar, community solar with storage, wind power and energy efficiency.<sup>35</sup>

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<sup>33</sup> <https://greenbanknetwork.org/malaysia-green-technology-and-climate-change-centre/>

<sup>34</sup> <https://greenbank.ny.gov/About/About>

<sup>35</sup> <https://greenbank.ny.gov/Investments/Portfolio>

## 9 HOW TO ESTABLISH A GREEN BANK

### A GREEN BANK ESTABLISHED WITH CAPITAL RAISED FROM PUBLIC FUNDS, DEVELOPMENT AID, AND EXPORT CREDIT AGENCIES ENCOURAGES COMMERCIAL BANKS TO TAP CLIMATE FUNDS

#### THE GREEN BANK AS A DIVISION OF A NATIONAL DEVELOPMENT BANK

##### ▶ PHILIPPINES

A green bank division could be formed and operationalized by the Development Bank of the Philippines (DBP). DBP is a state-owned development financial institution that is at the forefront of financing small-medium enterprises aligned with the government's sustainable development plan.<sup>36</sup> DBP also has experience of grants, ODA, concessional loans and currently processing direct access entity applications for the Green Climate Fund.

##### ▶ INDONESIA

There are four state-owned financial institutions in Indonesia that can institutionalize a green bank; Bank Mandiri, Bank Rakyat Indonesia (BRI), Bank Negara Indonesia (BNI) and Bank Tabungan Negara. They were mandated to support the government's development agenda including infrastructure and homes.<sup>37</sup> Bank Mandiri was specifically mandated to push financing for infrastructure development. In 2017, Bank Mandiri disbursed USD112.65 million loan facility to state-owned infrastructure firm PT Indonesia Infrastructure Finance (IIF).<sup>38</sup>

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<sup>36</sup> <https://www.dbp.ph/about-dbp/>

<sup>37</sup> <https://www.reuters.com/article/indonesia-banks-idUSL3N1ZV1ZR>

<sup>38</sup> <https://www.thejakartapost.com/news/2017/06/02/bank-mandiri-provides-rp-1-5-trillion-loan-facility-to-iif.html>

## ▶ VIETNAM

Similar to Indonesia, there are four state-owned financial institutions in Vietnam with specialized mandates that can organize a green bank, namely Vietnam Bank for Agriculture and Rural Development (Agribank), Bank for Investment and Development of Vietnam (BIDV), Joint Stock Commercial Bank for Foreign Trade of Vietnam (Vietcombank), and Vietnam Bank for Industry and Trade (Vietinbank). BIDV is the oldest state-owned bank active in the period of Vietnam's recovery, financing industrial, agricultural, transportation, public welfare projects, and key projects critical for the national economy.<sup>39</sup> BIDV's vast experience would be invaluable in establishing a green bank division.

### VIA AN EXISTING INSTITUTION THROUGH ROLE EXPANSION

The Philippines could transform an institution such as the Climate Change Commission, which is currently in charge of government's sustainability initiatives and NDC targets, into a green bank entity. Many countries have government agencies committed to addressing climate change but lacking a financing function. These institutions can be converted to a national green bank.

### AS A SUB-UNIT OF CURRENT EXISTING INSTITUTIONS

The government can establish green bank within an existing institution. This worked well with NY Green Bank. The green bank can be in the purview of the departments of energy, environment, science and technology, and the central bank.

### AS A NEW STAND-ALONE GREEN BANK

Inaugurate a new stand-alone green bank at the national level, replicating the success of the Connecticut Green Bank that innovated financial products that were flexible enough to meet the needs of community. Connecticut Green Bank programs attracted strong support from policymakers to incentivize clean energy consumers with rebates and tax measures.

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<sup>39</sup> <https://www.bidv.com.vn/en/ve-bidv/lich-su-phat-trien/>

## A REGIONAL GREEN BANK

A green bank for the Southeast Asia Region could set up headquarters in one of the cooperating countries. Such a regionally-based green bank benefits from economies of scale by distributing fixed costs and risk diversification and promotes good governance because it is overseen by several government representatives. This could bring together best practices that are replicable and make for a coordinated response at times of crisis.

An example of a region-based structure is the ASEAN+3 Macroeconomic Research Office (AMRO) based in Singapore. It has 10 member-states in ASEAN and is a trusted policy advisor in the region. It conducts macroeconomic surveillance and provides technical assistance to members.<sup>40</sup>

## A PROVIDER OF TECHNICAL ASSISTANCE AND CAPACITY BUILDING

The government establishes a technical assistance unit for the banking sector, especially small-medium banks that find it difficult to hire technical experts because of the high cost of due diligence. The technical assistance unit subsidizes incentives so that qualified engineers can be hired to support designated banks. The expense of hiring technical experts is then shared by the assigned bank and the green bank.

The green bank provides guidelines and methods to map out green financing of banks' loan portfolios and the principles of standardized environmental and social safeguards for financial institutions.

Recommended green financing should be made available not only to national development banks but should also create opportunities for commercial banks to jumpstart climate finance. Some examples of climate finance partner entities are

Access to public-sector capital such as official development assistance (ODA) and export credit agencies (ECA) with technical assistance is generally available only to national development banks. Access to such funding would encourage commercial banks to develop innovative financial products for green financing.

The green bank as a government-assigned National Designated Authority in Southeast Asian countries utilizes pooled regional subsidies to build capacity at commercial banks, regardless of government or private sector assets, to promote environmental and social safeguards, equitable gender policies, and sound project management.

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<sup>40</sup> [https://www.amro-asia.org/wp-content/uploads/2020/11/AMRO-Factsheet\\_English.pdf](https://www.amro-asia.org/wp-content/uploads/2020/11/AMRO-Factsheet_English.pdf)

Government-sponsored scholarships at foreign and local institutions that run specialized courses in green energy and sustainable finance should be provided to public and private sector financial personnel.

## BENEFITS OF ESTABLISHING A GREEN BANK

### ■ CROWD-IN EFFECT

When overseas climate funds allocate capital to an independent green bank, it can have a crowd-in effect that attracts capital from local commercial banks to invest in green bank projects. Conversely, foreign public funds are usually allocated to national development banks for their exclusive use. A crowd-in mechanism is more than likely to accelerate transition to a low-carbon economy by catalyzing commercial bank capital since a green bank is usually the focal point for green financing.

### ■ DATA COLLATION FOR NDC AND SDG TARGETS

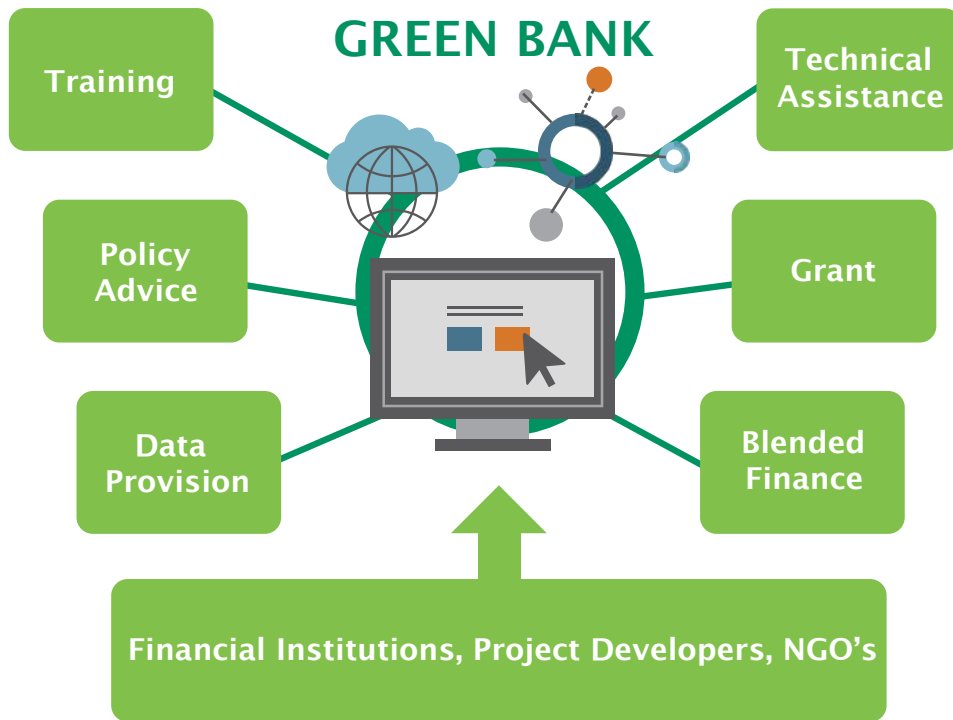
Governments can create a digital platform under green bank control to collate green financing and greenhouse gas emissions data to track both NDC and SDG targets and achievements so they can be achieved on time. Green bank structures depend on the country's priorities and private investors' risk and reward preferences.

### ■ ENHANCED CAPABILITY TO ASSESS RE PROJECTS

Governments can help commercial banks get technical assistance so that greater awareness and knowledge of green financing can mobilize commercial bank capital to support the transition to low-carbon economies.

### ■ EASIER ACCESS FOR LOCAL BANKS' PARTNERSHIP WITH CLIMATE FINANCE

Last, the green bank is a prime intermediary or focal channel to all stakeholders. The green bank can establish cooperation between multilateral development banks and/or climate finance and local banks instead of bilateral cooperation in each institution. The green bank helps determine the best partner for the local bank depending on its individual needs.



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