Mobilization of Private Investment in Green Growth in Viet Nam

Case Studies based on GGGI's Activities

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Acronyms

ADB	Asian Development Bank
BE	Biomass Energy
BAU	Business as Usual
CHP	Combined Heat and Power
DFI	Development Finance Institution
FiT	Feed-in Tariff
GWh	Gigawatt Hours
GGGI	Global Green Growth Institute
GoV	Government of the Socialist Republic of Viet Nam
GHG	Greenhouse Gas
GDP	Gross Domestic Product
kt	Kilotonne
Mt	Megatonne
MOC	Ministry of Construction
MPI	Ministry of Planning and Investment
MSW	Municipal Solid Waste
NDC	Nationally Determined Contribution
OECD	Organisation for Economic Co-operation and Development
PPA	Power Purchase Agreement
SMEs	Small and Medium-sized Enterprises
SMEDF	Small and Medium Enterprise Development Fund
SEDP	Socio-economic Development Plans
SLFF	Solar Leasing Finance Facility
SDG	Sustainable Development Goal
UNDP	United Nations Development Programme
VGGS	Viet Nam National Green Growth Strategy
VNMC	Viet Nam National Mekong Commission

Figures

I. Background

The Global Green Growth Institute's (GGGI) activities in Viet Nam focus on supporting the Government of the Socialist Republic of Viet Nam (GoV) with implementing its national plans and priorities, including the Viet Nam National Green Growth Strategy (VGGS), its Nationally Determined Contribution (NDC) and the Sustainable Development Goals (SDGs).

GGGI's assistance is provided to key ministries on: (i) developing and implementing green growth action plans; (ii) carrying out sectoral assessments for potential green growth initiatives; (iii) developing customized investment guidelines for the green growth, providing screening methods and prioritizing investment opportunities as well as mobilizing public and private capital sources; and (iv) supporting the development of green cities.

GGGI also has supported the identification, prioritization, design and development of bankable projects on biomass energy, rooftop solar, urban infrastructure (e.g. wastewater projects), and has also assisted with establishing green credit manuals for small and medium-sized enterprises (SMEs) to access finance.

1. Green Growth and Climate Change Policy Agenda of Viet Nam

The GoV launched the VGGS in 2012 and the Green Growth Action Plan in 2014, demonstrating that green growth has become the main driver of Viet Nam's economic development. The objectives of the VGGS are[1]:

- Increased macroeconomic efficiency;
- Deployment of technologies to adapt to climate change and reduce greenhouse gas (GHG) emissions by 1.5-2% a year until 2030;
- Improved living standards through green economy actions in industry, infrastructure, employment and natural capital.

The VGGS is focused on reducing GHG emissions intensity by 8-10% by 2020, promoting the use of clean and renewable energy to target the reduction of energy consumption per unit of GDP by 1-1.5% per year, and reducing GHG emissions from energy activities by 10-20%. The VGGS also has targets on sustainable production and consumption, including mainstreaming clean industrialization approaches into sectoral plans, developing green industrial and agricultural technologies, and promoting sustainable consumption.

The Green Growth Action Plan, moreover, provides guidelines and priority activities to be carried out at the central and local levels to achieve VGGS goals[2]. A total of 66 activities in 12 groups include:

- Mainstreaming green growth into Socio-economic Development Plans (SEDP) and sectoral master plans;
- Fostering enterprise development and public-private partnerships;
- Developing new sources of clean energy;
- Improving urban areas through green building and sustainable transport.

Furthermore, Viet Nam's NDC identifies opportunities for achieving mitigation in the energy, agriculture, land use and waste sectors over 2021-2030. With domestic resources the GoV has committed to reducing emission by 8% by 2030 compared to the business as usual scenario (BAU), and this contribution could

1. Government of the Socialist Republic of Viet Nam. 2012. "National Green Growth Strategy".
2. Government of the Socialist Republic of Viet Nam. 2015. "National Action Plan on Green growth in Viet Nam For the Period of 2014-2020".

be increased up to 25% with international support. With Viet Nam's climate vulnerability, the NDC has also identified priority adaptation measures over 2021-2030[3].

2. Green Growth Investment in Viet Nam

While Viet Nam has made progress in attracting climate finance, increased flows of investment are required given the scale of the climate challenge facing the country. With a reduction target of 85 Mt CO2 emissions for the period up to 2030, the Ministry of Planning and Investment (MPI), in collaboration with United Nations Development Programme (UNDP), has estimated that financing the transition to green growth will cost at least USD 30.7 billion by 2020 (which is equal to 15% of Viet Nam's GDP in 2015).[4][5] This estimation was calculated using Marginal Abatement Cost Curve analysis, which looked at 35 development options across nine sectors/sub-sectors.

To overcome this financing gap and enable green growth, Viet Nam will need to increase the effectiveness of each dollar of climate finance and diversify funding sources. However, the lack of effective domestic funding sources for targeted investments inhibits the leveraging of external funds. And as Viet Nam is now a middle-income country, it is transitioning away from official development assistance grants and highly concessional loans, which will limit the availability of international public finance. As this report highlights, constructing an enabling policy environment with support from GGGI will be critical to Viet Nam's ability to access sources of finance for green growth from private investors.

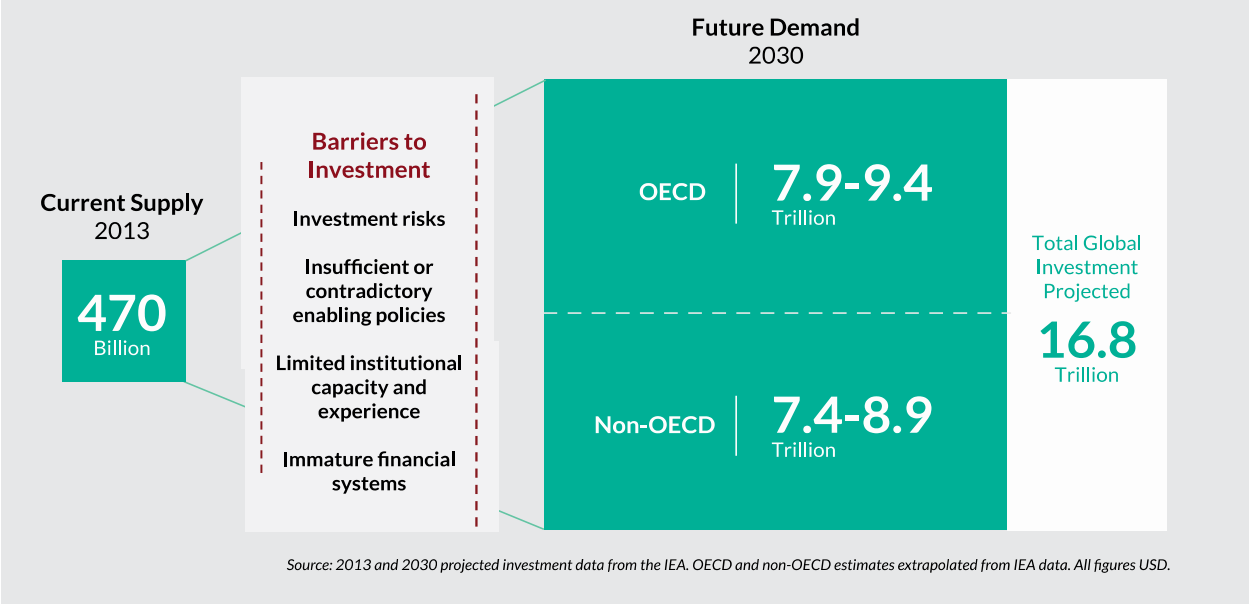
3. Government of the Socialist Republic of Viet Nam. 2016. "Intended Nationally Determined Contribution of Viet Nam".
4. United Nations Development Programme (UNDP). Background Analysis of Marginal Abatement Costs for the Green Growth Strategy. Unpublished.
5. GIZ. 2016. Green Financial Sector Reform in Viet Nam: Green Bonds, Green Index and Green Credit Programmes.

3. Global Investment Requirements

Public finance cannot provide all the capital needed to finance mitigation and adaptation projects globally, which are estimated by GGGI to cost as much as USD 16.8 trillion between 2016-2030 (as shown in Figure 1). The majority of this climate finance, of which an estimated USD 7.4–8.9 trillion will be required for climate finance investment in non-OECD countries, must come from the private sector. While there is not a shortage of private investment capital globally, with institutional investors (e.g. investment funds, insurance companies, pension funds and sovereign wealth funds) holding close to USD 71 trillion in assets under management in 2014, there remains a financing gap for achieving climate action and building resilient infrastructure in developing economies[6]. Analysis by GGGI has found that non-OECD countries face an estimated financing gap of USD 2.5–4.8 trillion over 2016-2030, and bridging this gap would therefore require an additional USD 166–322 billion in climate finance per year[7].

While climate finance flows increased to USD 681 billion in 2016 (flows increased by 17% in 2015-2016 compared to the period 2013-2014), climate investment still remains relatively small in the context of wider trends in global investment due to investment risks in developing economies and continued "brown" investments in coal, oil and gas-based energy growth. This growth in climate finance flows was driven by high levels of private investment in renewable energy, which is the largest segment of global climate finance flows[8]. While investments in onshore wind and solar PV are on track, investment in other sectors continues below the estimated 2°C investment needs, with adaptation finance in particular below stated aims to balance mitigation and adaptation finance[9].

Figure 1: Climate Finance Investment Needs[10]



Source: 2013 and 2030 projected investment data from the IEA. OECD and non-OECD estimates extrapolated from IEA data. All figures USD.

6. World Resources Institute. 2016. "Navigating the Sustainable Investment Landscape".
7. Global Green Growth Institute (GGGI). 2016. "Mind the Gap: Bridging the Climate Financing Gap with Innovative Financial Mechanisms". Insight Brief One. Seoul, South Korea.
8. United Nations Framework Convention on Climate Change (UNFCCC). 2018. "Summary and recommendations by the Standing Committee on Finance on the 2018 Biennial Assessment and Overview of Climate Finance Flows".
9. International Energy Agency (IEA). 2016. "Energy Technology Perspectives 2016". Paris, France.
10. Global Green Growth Institute (GGGI). 2016. "Mind the Gap: Bridging the Climate Financing Gap with Innovative Financial Mechanisms". Insight Brief One. Seoul, South Korea.

II. Overarching Framework for Increasing Private Investment

1. Barriers and Risks to Raising Investment

Given that investment requirements far exceed available resources in Viet Nam, effective channeling of public resources to leverage opportunities to utilize both national and international sources of private and institutional finance is necessary. To bridge the financing gap, climate projects need to be able to access the sizable pool of institutional investor capital present globally[11].

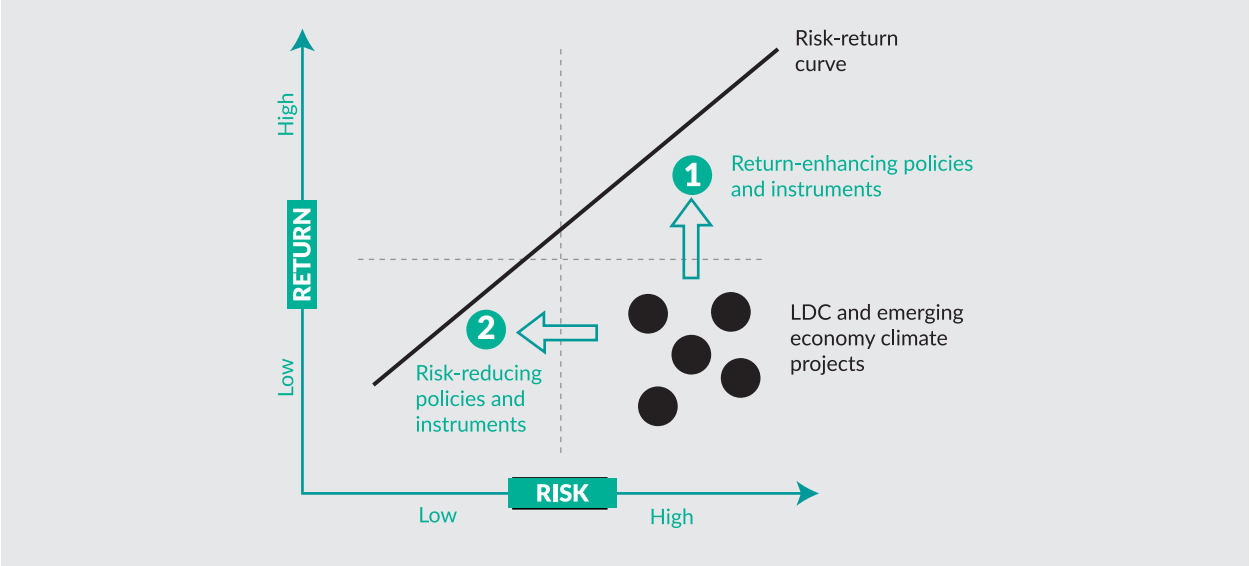
One of the fundamental challenges of raising private finance for climate projects in emerging economies is how to meet private investor risk-return expectations. It is important for public sector actors to not only understand why climate projects in emerging markets are often perceived as high risk, but also why they are categorized as low return[12].

The investment practices employed in OECD countries have proven inadequate to mitigating the risks faced in emerging economies. Based on research conducted by GGGI, the most common risks faced by climate projects in developing economies include[13]:

- Political risk: Changes in national or local government support for climate projects.
- Regulatory risk: Policies promoting BAU growth (e.g. fossil fuel subsidies); poor enabling policies (e.g. low feed-in-tariffs); weak legal frameworks and regulation enforcement.
- Technology risk: Limited experience and capacity in construction of climate change projects and operations and maintenance of technologies; and inadequate supporting infrastructure.
- Credit risk: Counterparty creditworthiness, risk of default or non-payment; limited national or local experience with project management; and end-user payment for public services.
- Capital market risk: Limited market liquidity, and high transaction costs.
- Information asymmetries: Private investors face high risks during the development phases from construction costs and subsequent pricing that may be constrained by the state and uncertain future revenue streams and demand[14].

11. Ibid.
12. Ibid.
13. Ibid.
14. Intergovernmental Group of Twenty-Four on International Monetary Affairs and Development (G-24) and Global Green Growth Institute (GGGI). 2015. “Infrastructure Finance in the Developing World”.

Figure 2: The Risk-Return Profile for Climate Projects[15]



Achieving the green growth objectives of Viet Nam will entail identifying and scaling new approaches to project structuring and risk mitigation to attract funds from private investors. In order to raise private finance, climate projects must appeal to both commercial and institutional investors. Of the two, commercial investors (e.g., banks, private equity firms) have shorter time horizons and are willing to invest in projects with relatively more risk coupled with higher returns. They are interested in investing in bankable projects, which are projects that have already addressed early stage risks. In contrast, institutional investors typically have a lower risk-return profile than commercial investors. They are attracted to projects with reliable long-term cash flows that they can match to their long-term liabilities[16].

To encourage greater climate finance investment, public sector actors should provide policy and financial instruments at scale. As shown in Figure 2, these include:

a. Return-enhancing instruments (e.g., feed-in-tariffs, generation-based incentives, tax incentives), which are usually financial policies, and;

b. Risk-reducing instruments (e.g. transparent investment policies, credit enhancement mechanisms and guarantees), which lower the investment risk of projects by compensating investors with additional financial and/or non-financial support.

Policymakers, public financial institutions, and other stakeholders should consider both return-enhancing and risk-reducing instruments, as they can work in tandem to make investment in climate projects more appealing to the private sector. As these risks are interrelated and manifest in different ways, solutions should be tailored to the specific circumstances, challenges and capabilities facing the central and provincial governments of Viet Nam[17].

2. GGGI's Value Chain

GGGI works with GoV as an advisor to explore the value of green growth opportunities in the context of the VGGS, and other key national and sectoral planning frameworks and development goals. This support is focused on achieving transformational and catalytic outcomes, with the long-term aim of

15. Global Green Growth Institute (GGGI). 2016. "Mind the Gap: Bridging the Climate Financing Gap with Innovative Financial Mechanisms". Insight Brief One. Seoul, South Korea.
16. Ibid.
17. Ibid.

strengthening the enabling environment for green growth in the country[18]. A key objective of GGGI is to develop Viet Nam's capacity, and GGGI does this by providing tailored capacity development programs and working alongside government counterparts on a daily basis.

Figure 3: GGGI's Value Chain[19]

A key priority for GGGI is supporting Viet Nam with accessing finance to implement the VGGS, its NDC and meet the commitments made under the SDGs. GGGI's support is provided along its Value Chain, as shown in Figure 3.

GGGI supports implementation related to strategy and planning at the left-hand side and middle of the value chain, and the preparation of bankable projects and mobilizing financing for green growth investments on the right-hand side of the value chain. The left of the value chain, moreover, is focused on providing sectoral and socio-economic impact assessments, developing green growth plans at the national or sectoral level, and assessing and designing legal and institutional frameworks. This green growth planning work builds the institutional foundations for project implementation and climate finance mobilization. Further down the value chain, GGGI supports countries develop bankable projects, national financing vehicles and risk reducing instruments to bridge the gap between finance and project development. The assistance provided by GGGI to GoV and the private sector along its value chain is as follows:

- Developing a pipeline of bankable and inclusive green growth projects and prioritized investment plans;
- Designing and structuring commercially viable projects to attract finance;
- Structuring financial solutions that blend domestic and international public and private finance to reduce risk;
- Designing innovative financial mechanisms in the form of funds and instruments that overcome green growth barriers.

While GGGI considers the value chain pathway as the most effective route towards green growth, Viet Nam's transition is dependent on its unique circumstances and government capacity, and therefore GGGI's support is based on an ongoing dialogue and partnership with GoV counterparts[20].

18. Global Green Growth Institute. 2016. "Viet Nam Country Planning Framework 2016-2020".
19. Global Green Growth Institute (GGGI). 2017. "GGGI Refreshed Strategic Plan 2015-2020".
20. Global Green Growth Institute (GGGI). 2017. "GGGI Refreshed Strategic Plan 2015-2020".

III. Case Studies on Green Growth Policy Support

GGGI is partnering with GoV to strengthen the enabling environment for mobilizing private investment in green growth. These case studies demonstrate how GGGI is reducing the barriers for private investors in Viet Nam, and this support on sectoral planning and policy design is on the left-hand side of GGGI's value chain.

1. Biomass Energy Planning in Soc Trang

The development of biomass energy (BE) is a GoV priority and is a core part of the Revised Power Development Plan VII (PDP7) for the 2011-2020 Period with the Vision to 2030. GGGI has supported the development of a master plan to further develop and utilize biomass energy (BE) in Soc Trang province by 2020, with a vision towards 2030[21]. This objective of the plan is to assess the potential of BE sources in the province, identify the economic and environmental value of renewable energy adoption, and guide investment and construction to exploit available BE sources in an effective manner. The overall goal of this project is to increase energy productivity through the implementation of the master plan and mobilization of finance for project implementation.

BE can become an important energy source in Soc Trang – depending on the feed-in tariff (FiT) provided, the master plan has identified 12-68 MW of potential BE generation. The biomass that is most suitable for BE in Soc Trang is rice husk, sugar bagasse, wood by-products and straw. The selection of these feedstocks is based on analysis and assessment of their current economic values (if any), the ease of collection and transport cost, environmental sustainability, and investment requirements of biomass power project owners.

21. Global Green Growth Institute. 2018. "Master Plan for The Development of Biomass Energy in Sóc Trăng Province By 2020, With A Vision To 2030".

The master plan suggests that at the current FiT for bagasse-based combined heat and power (CHP) option at US 5.8 cents/kWh, the commercialization of BE projects in the near future is unlikely due to a lack of financial viability. It is recommended that further government support should be provided to make BE commercially viable through policy and regulatory levers[22]. These include increasing the FiT for BE, establishing a renewable energy development fund, strengthening international cooperation to attract foreign investment, implementing research and development programs, and issuing national standards for BE technology.

2. SME Development Fund

Established in 2013, the Small and Medium Enterprise Development Fund (SMEDF) is a financial mechanism that, under MPI, provides concessional loans for SMEs through authorized banks. The objective of the SMEDF is to provide financial support for SMEs to increase competitiveness and thus contribute to income growth, job creation and economic development.

The benefits of this approach are improved access to concessional finance that meets the repayment needs of SMEs. This finance can be used for business projects in the following sectors: agriculture, forestry and fisheries; processing industry and manufacturing; water supply, operation management, and waste and wastewater treatment. SMEDF prioritizes lending to SMEs that are engaged in innovation and are increasing labor productivity, manufacturing energy saving and environmental products, utilizing green energy and technologies, and are creating new jobs and employing female workers.

The provision of finance to SMEs from the SMEDF will leverage private investment in green growth projects. SMEDF provides preferential interest rates to SMEs for the majority of the debt financing, and the remainder of the debt is sourced from authorized banks. To access finance from the SMEDF, the SME has to provide funding for part of the total investment for the project (roughly 20%).

GGGI has been supporting the SMEDF with developing guidelines to prioritize green and socially inclusive loans, which will be completed in 2018. By adopting these guidelines, SMEDF will prioritize green, innovative, gender responsive and socially inclusive loans to SMEs. SMEDF has indicated the allocation of USD 325,000 as pilot green loans to SMEs once these guidelines are operationalized.

3. Investment Prioritization for Urban Projects in Dien Ban and Tra Vinh

GGGI has supported the Ministry of Construction (MOC), and the two selected pilot cities of Dien Ban and Tra Vinh, with mainstreaming green growth into urban masterplans and prioritizing investment planning. This support included provision of an easily implementable framework to support identifying priority investments that are of critical need and will result in green growth.

The framework was also developed to facilitate the shortlisting of green infrastructure projects that can be presented to financiers and project developers and to raise much needed infrastructure financing for Viet Nam's cities. As current national urban planning frameworks and guidelines in Viet Nam lack explicit requirements for green growth and are often not fit for purpose, this toolkit serves to mainstream climate and environmental requirements into infrastructure project development and thereby strengthen green growth implementation.

22. Ibid.

The framework includes a toolkit for increasing the objectivity of decision-making and prioritizing infrastructure projects that have positive development outcomes. The toolkit determines the financing gap for project development, and also assesses whether projects are aligned to the fiscal requirements of the municipality.

GGGI has supported the city governments in Dien Ban and Tra Vinh with implementing the investment prioritization toolkit in two workshops. The outcome of these workshops was a list of prioritized and costed investment options that have been scored based on the project's public support; environmental, climate, and social and gender impact; economic and financial considerations; and implementation feasibility. The Dien Ban and Tra Vinh city authorities presented these projects in Hanoi to development partners. While these projects were positively received by development partners, there were concerns over the levels of public debt required for the projects and therefore GGGI is supporting city authorities with raising private investment.

GGGI has subsequently supported Tra Vinh City to develop the orientation to Green City Master Plan. Moving forward, it expected that GGGI will provide a framework for green investment for the city, which will result in a more systematic allocation of investment.

4. Wastewater Treatment in the Mekong Delta

GGGI has completed analysis as part of a partnership with the Viet Nam National Mekong Commission (VNMC) on urban wastewater management in the Mekong Delta. This analysis looked at how improved wastewater treatment can result in environmental sustainability, achieve climate change resilience, and improved living conditions for the industrializing and rapidly increasing population in the Mekong Delta, with Tien Giang Province as the field study.

Over recent decades, the value of natural-capital in the delta has declined due to population growth and urbanization, intensive agricultural and aquaculture development, and industrialization. Developing proper wastewater treatment to reverse the major cause of environmental damage is a health imperative, with waste discharge threatening the livelihoods of delta residents, and is essential for sustaining economic development.

The objective of this analysis was to review the policy and legal frameworks for financing urban wastewater treatment and provide policy recommendations to enhance infrastructure and mobilize private sector finance. Potential investment projects were identified that would improve urban drainage, sewerage collection, solid waste disposal, and domestic and industrial wastewater treatment. The specific policy recommendations provided included[23]:

- Reducing health risks through treatment of all wastewater to meet standards for reuse or release to the environment;
- Replacing leaking sewer pipes to minimize the escape of polluted water;
- Capacity building to service providers and owners of sanitation services to improve program efficiency and sustainability;
- Appropriate policies and regulatory framework to attract private sector investment in wastewater collection and treatment;
- Public awareness campaigns in urban sanitation programs to convey the benefits of wastewater services.

23. Global Green Growth Institute (GGGI). 2016. "Urban Wastewater Management Project Final Report: Transitioning the Mekong Delta to a Path of Green and Sustainable Economic Growth".

IV. Case Studies on Investment Mobilization for Bankable Projects

The case studies presented in this section provide an overview of how GGGI is supporting the implementation of Viet Nam's policies and planning frameworks, including the VGGS and NDC, through formulating bankable projects, mobilizing private investment and developing green infrastructure. This support is on the right-hand side of GGGI's value chain and is following on from GGGI's assistance to GoV on sectoral planning, policy design and strengthening the enabling environment for green growth implementation.

1. Biomass Energy (BE) Bankable Projects

Biomass-based power sources will be developed through co-generation at sugar mills and food processing factories. Currently, the technology in sugar mills is outdated and inefficient in Viet Nam, which limits the potential for power generation. Technology innovation and capacity building will therefore be essential for increasing power co-generation.

The government is supporting the increased delivery of BE and aims to have the share of electricity produced from biomass sources reaching approximately 1% in 2020 and 2.1% in 2030[24]. In 2014, the Government issued Decision No. 24/2014/QD-TTg which allowed for the negotiation of power selling price for sugar mills and provided a FiT.

In 2018, GGGI provided support on developing a master plan for BE in Soc Trang province. Following on from this, GGGI has assisted GoV with:

- Developing pre-feasibility studies in 5 sugar mills (together with GIZ);
- Acting as a financial advisor for one BE project (which was 25 MW and approximately USD 40M);
- Undertaking capacity building for banks and held an investor forum.

Based on these 5 pre-feasibility studies, GGGI and GIZ have completed an industry analysis[25] and provided recommendations to enhance the bankability of BE projects in the sugar industry.

It was estimated that the biomass energy potential of the sugar industry could reach 737 MW. In order to capture this BE potential, the enabling environment needs to be strengthened. The current FiT (US 5.8 cents/kWh) is currently insufficient to incentivize sugar mills to increase BE. It is recommended that the FiT is to be increased to US 9.35 cents/kWh for all BE technologies.Further, the BE masterplan for Soc Trang found that the commercial potential of BE in the province will increase from 12 MW (at US 5.8 cents/kWh) to 68 MW (at to US 9.35 cents/kWh). Capturing the BE potential of 737 MW is estimated to create 2180 green jobs, generate approximately 4300 GWh per annum which would reduce emissions of nearly 2.7 MtCO2e pa, contributing to the achievement of Vietnam's NDC, VGGS and SDGs.

To enhance the bankability of BE projects in Vietnam, the following recommendations are suggested

- Improvements to power purchase agreements (PPAs);
    - The use of multiple fuels should be considered as this would address the seasonal limitations from only using bagasse, provided that transportation costs are competitive;
    - Developers should consider new financing models, such as a Special Purpose Vehicle (SPV), to attract additional investment;

24. Global Green Growth Institute. 2018. "Master Plan for The Development of Biomass Energy in Sóc Trăng Province By 2020, With A Vision To 2030".
25. Global Green Growth Institute and GIZ. 2018. Sweetening the Deal for Biomass Energy in Viet Nam's Sugar Industry.

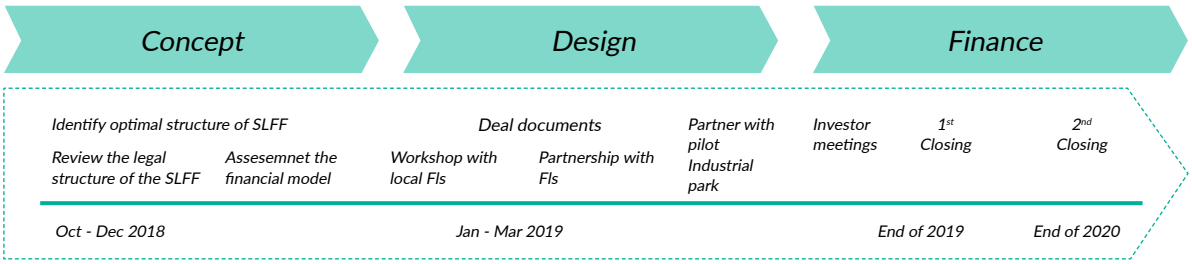
- Local banks need to enhance their capacity in handling RE projects and SPV financing.

2. Solar Leasing Finance Facility (SLFF) Project

GGGI is providing support on developing a distributed SLFF for Viet Nam, which is an innovative financial instrument to overcome green growth barriers in the energy sector and is at the right-hand side of GGGI's value chain. The objective of the SLFF is to provide green finance for companies and industrial parks to access renewable energy efficiently and at scale.

Viet Nam has great potential for solar rooftop development with 328 industrial parks nationwide and the potential for residential and commercial solar rooftop is estimated at up to 5 GW.[26][27] Due to barriers, however, there is minimal solar rooftop development. These barriers include cost-competitiveness, lack of appropriate financial mechanisms and inexperience of factory owners in the installation of solar rooftop systems.

Figure 4: Timeline for developing the SLFF



As shown in Figure 4, GGGI is currently at the design stage of the SLFF – and is developing a legal assessment of the SLFF for industrial parks. This financial instrument will have a focus on the energy and green cities sectors, and a pilot will commence at an industrial park in Viet Nam. This industrial park has the potential for 60-80 MW of rooftop solar deployment based on an initial assessment.

To form a funding base for the SLFF, GGGI plans to mobilise finance from local commercial banks and development financial institutions, such as Proparco, GCF SAP facility and the Switzerland based Global Climate Partnership Fund. It is expected that the SLFF will raise USD 20 million in the first closing, which is targeted for the end of 2019, and then GGGI will roll out the SLFF nationwide and aim to raise USD 100 million in the second closing at the end of 2020. The SLFF, once implemented, could potentially create over 50 green jobs and generate 52 gigawatt hours (GWh) of clean electricity per annum, and reduce approximately 323 kt of CO_2 over 10 years.

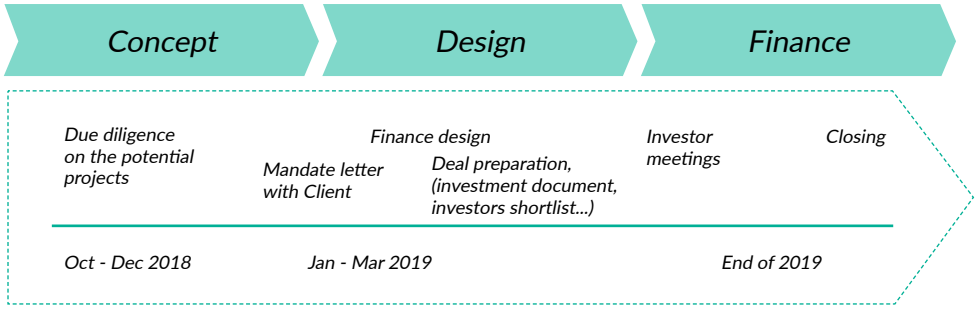
26. Ministry of Planning and Investment. 2017. Department of Management of Economic Zones.
27. Federal Ministry for Economic Affairs and Energy. 2016. Solar PV Rooftop Investment Opportunities in Viet Nam.

3. Municipal Solid Waste to Energy (MSWTE) Project

GGGI is supporting the GoV with designing and financing MSWTE investment projects. Rapid urbanization and high rates of population growth in Viet Nam has led to increased municipal solid waste (MSW) generation of 10% per year in recent years[28]. Over 80% of this MSW is buried in uncontrolled dumpsites, and the waste sector represents 7% of Viet Nam's national GHG emissions[29]. Currently there is only one waste-to-energy plant in operation in Ha Noi City, which processes 75 tons of MSW and generates 1.93 MW of electricity per day. With a 12% annual increase in the volume of MSW in Viet Nam, MSWTE presents an opportunity to reduce the environmental impacts of MSW while improving energy security.

A key partner in this project is EEP Mekong, a development grant instrument sponsored by MFA Finland and the Nordic Development Fund that supports private sector clean energy projects in the Mekong Region that are close to commercial maturity but require finance to enable sustainable business growth. EEP Mekong recently provided feasibility study grants for eight MSW2E projects in Viet Nam.

Figure 5: Timeline for MSWTE Project Development



With GGGI's capacity in financial mobilization for green projects and experience working in the waste and energy sectors in Viet Nam, GGGI's support on the MSWTE project will demonstrate how Viet Nam can achieve low-carbon green growth and contribute to meeting the targets under the VGGS and NDC. The MWSTE project is estimated to create over 120 jobs and generate 360 GWh of clean electricity per annum, and result in the reduction of approximately 2.3 Mt of CO_2 over 10 years.

To analyze the eight feasibility studies to select the MSW2E project with the most favorable risk-reward ratio, GGGI will partner with EEP Mekong. GGGI will selected a project from the pipeline, and as shown in Figure 5, will further de-risk the project and mobilize finance – the project has a planned closing date of end of 2019.

4. Ben Tre Wastewater Management Project

Building on the policy work with VNMC on wastewater management, GGGI has helped GoV access multilateral development bank finance to develop a low-carbon and climate-resilient wastewater management and sanitation project for Ben Tre City. The city is located in the coastal lowlands in the Mekong region, which is considered as being highly vulnerable to climate change and associated extreme weather events. GGGI partnered with the Asian Development Bank (ADB) to design a feasibility study to unlock ADB loan financing to implement urban wastewater management in Ben Tre.

Unregulated discharge of raw sewerage, municipal wastewater, industrial byproducts and solid waste threatens the health and livelihoods of urban households, and this is projected to worsen under climate

28. United Nations ESCAP. 2016. Nationally Appropriate Mitigation Action (NAMA) programme for the solid waste sector of Viet Nam.
29. Ministry of Natural Resources and Environment. 2017. The Second Biennial Updated Report of Viet Nam to the UNFCCC.

change. GGGI is developing bankable projects to address critical urban green growth infrastructure gaps and build climate resilience. For this project on urban wastewater for Ben Tre City, GGGI has provided technical expertise on:

- Assessing and designing feasible technical options for sanitation improvement and wastewater treatment in Ben Tre City;
- Supporting local government in preparing project approval;
- Conducting economic and financial analysis and assessing policy and institutional frameworks;
- Reviewing climate change adaptation and mitigation needs, low-carbon and low-energy/water use solutions;
- Conducting an Initial Environmental Examination meeting ADB and GoV standards for the selected option.

Approximately USD 35 million in ADB loans and government funding is expected to be raised to build this low-carbon climate resilient urban wastewater management system in Ben Tre City.

V. Recommendations

The following recommendations on engaging the private sector are suggested based on GGGI's experience designing policy and implementing projects globally and in Viet Nam.

1. Policy Interventions

There are a range of policy interventions that can be used to create incentives for private investors to finance green growth in Viet Nam.[30] [31] [32]

- Project identification and development should be strengthened to unlock climate finance flows. Investment plans and project pipelines should also be linked to national and sectoral planning frameworks to provide policy certainty to the private sector. Policies and investment plans should be developed in partnership with the private sector to ensure investor support.
- The risk appetite of private investors should be enhanced. GoV should use a wide range of risk mitigation instruments to unlock private investment, including FiTs for incentivizing renewable energy development, strengthening urban regulatory frameworks to build green cities, and developing national standards for green technology usage.
- GoV should also strengthen regulations on PPAs to improve the bankability of renewable energy projects.
- Policies developed by GoV should be aligned with the VGGS and NDC and promote sound business models for environmental protection – e.g. approaches that deliver environmental outcomes, and are financially feasible and result in green job development.
- GoV should also focus on improving the ease of doing business in Viet Nam, including through making business licensing processes more efficient, strengthening legal institutions, and legislating for guaranteed revenue streams for green investors.
- Increased mobilization of private investment is essential in reducing pressures on public debt ceiling that Viet Nam is currently facing.

2. Risk-Sharing Mechanisms

Risk-sharing mechanisms are required to mobilize private investment flows, as investors will only invest in infrastructure projects if they consider that the risks allocated to them are manageable or can be mitigated. Risk-sharing mechanisms, such as financing vehicles, can use international public finance to attract additional investment from private investors.[33] [34]

- GoV should use public funds to de-risk private investment in renewable energy, green cities, and waste management infrastructure. SMEDF is an example of such financing mechanisms which is designed in a way whereby private funding is leveraged towards green and socially inclusive projects.
- Strengthen financial intermediation and credit enhancement practices to enhance the financial market and increase availability of financial instruments to reduce risk for developers and investors.

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3. Capacity Building for the Private Sector

Providing capacity building to private developers, commercial banks and private investors should also be a priority. The private sector, including domestic financial institutions, can be strengthened by:

- Improving the banks understanding of renewable energy and green growth technologies and providing support in the appraisal of green projects.
- Supporting project developers to access finance from banks and other financial instruments to implement the Green Growth Strategy. GGGI and MPI has provided an overview of green finance and green banking trends, concepts, opportunities and procedures in Viet Nam.

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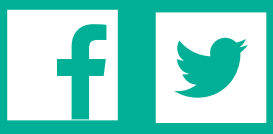

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