



Global
Green Growth
Institute

Impact Pathway Review: Viet Nam Program

Detailed Results Report

Impact & Evaluation Unit, 2020



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Acronyms

ADB	Asian Development Bank
AFD	Agence Française de Développement
BMZ	Federal Ministry of Economic Cooperation and Development
CAPEX	Capital expenditures
CEIAP	Clean Energy Investment Accelerator Partnership
COP	Conference of the Parties
CPF	Country Planning Framework
DISA	Department of Investment Supervision & Appraisal
DSNRE	Department of Science, Education, Natural Resources and the Environment
ESCO	Energy Service Companies
GGAP	Green Growth Action Plan
GIZ	German development agency
HCMC	Ho Chi Minh City
IGGG	Investment Guideline for Green Growth
MDB	Multilateral Development Bank
MICs	Middle Income Countries
MOC	Ministry of Construction
MoF	Ministry of Finance
MOIT	Ministry of Industry and Trade
MoNRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
MSWTE	Municipal solid waste to energy
NDC	Nationally Determined Contributions
ODA	Official Development Assistance
OPEX	Operating expenses
P4G	Partnering for Green Growth and the Global Goals 2030
PM	Prime Minister
PPTA	Project preparatory technical assistance
SDG	Sustainable Development Goals
SME	Small and medium-sized enterprises
SMEDF	SME Development Fund
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VGGS	Viet Nam Green Growth Strategy
VSSA	Vietnamese Sugar and Sugarcane Association

Introduction

About this report

This report was produced as part of the Impact Pathway Review (IPR) of GGGI's Viet Nam Program undertaken by the Impact & Evaluation Unit (IEU).

It is a companion document to the ***Viet Nam Program IPR – Key Findings and Recommendations*** report and provides the supporting evidence underpinning the impact pathway diagram and the key findings and recommendations from the IPR.

Impact Pathway for GGGI's Viet Nam Program

The contents of this report are organized based on the impact pathway for the Viet Nam Program. The impact pathway is a theory of change / results framework for GGGI country programs constructed using information from the project level. The resulting impact pathway for the Viet Nam is presented in **Figure 1** below.

A brief explanation of the impact pathway's key features is provided here to help readers understand and interpret the diagram.

- ***Programmatic solutions:*** All parts of the Viet Nam Program can be grouped into 5 programmatic solutions¹, as shown by the colored boxes. For this report, they have been relabeled to improve readability.

CPF priority	Programmatic Solution	Label used in this report	Color
Green growth mainstreamed into national development planning and financing	Climate Action	Viet Nam Green Growth Strategy (VGGGS) Implementation & Financing	Green
Green growth mainstreamed into urban development planning and projects	Climate Action	Green Urban Development	Blue
	Waste management	Waste Management	Orange
Renewable energy promoted through enabling policies and investment projects	Solar PV	Solar energy	Yellow
	Waste management	Biomass energy	Red

Note: The Viet Nam Program also includes work belonging to the 'Green Investment' programmatic solution. In this IPR, 'Green Investment' is treated as cross-cutting and shown as outcomes within other programmatic solutions.

- ***Intermediate outcomes:*** In each of these areas, GGGI delivers outputs to achieve key intermediate outcomes along different stages of the value chain: (i) policy (ii) financing² (iii) investment projects. *Planned outcomes* are shown in white boxes in the diagram. The current status of *actual outcomes* is summarized with various icons. The actual status of outcomes was determined through document reviews and interviews carried out by IEU.

¹ GGGI has recently adopted a menu of 10 Programmatic Solutions, aligned to *Strategy 2030*. These are essentially a set of defined thematic interventions that GGGI wishes to focus on.

² Financing covers instruments and mechanisms designed to mobilize green finance, without any specific projects attached. Examples include national financing vehicles, loan programs, bonds or domestic budget allocations.

Icon	Status of actual outcome
✓	Outcome achieved
⌚	Outcome in progress
✗	Outcome not achieved

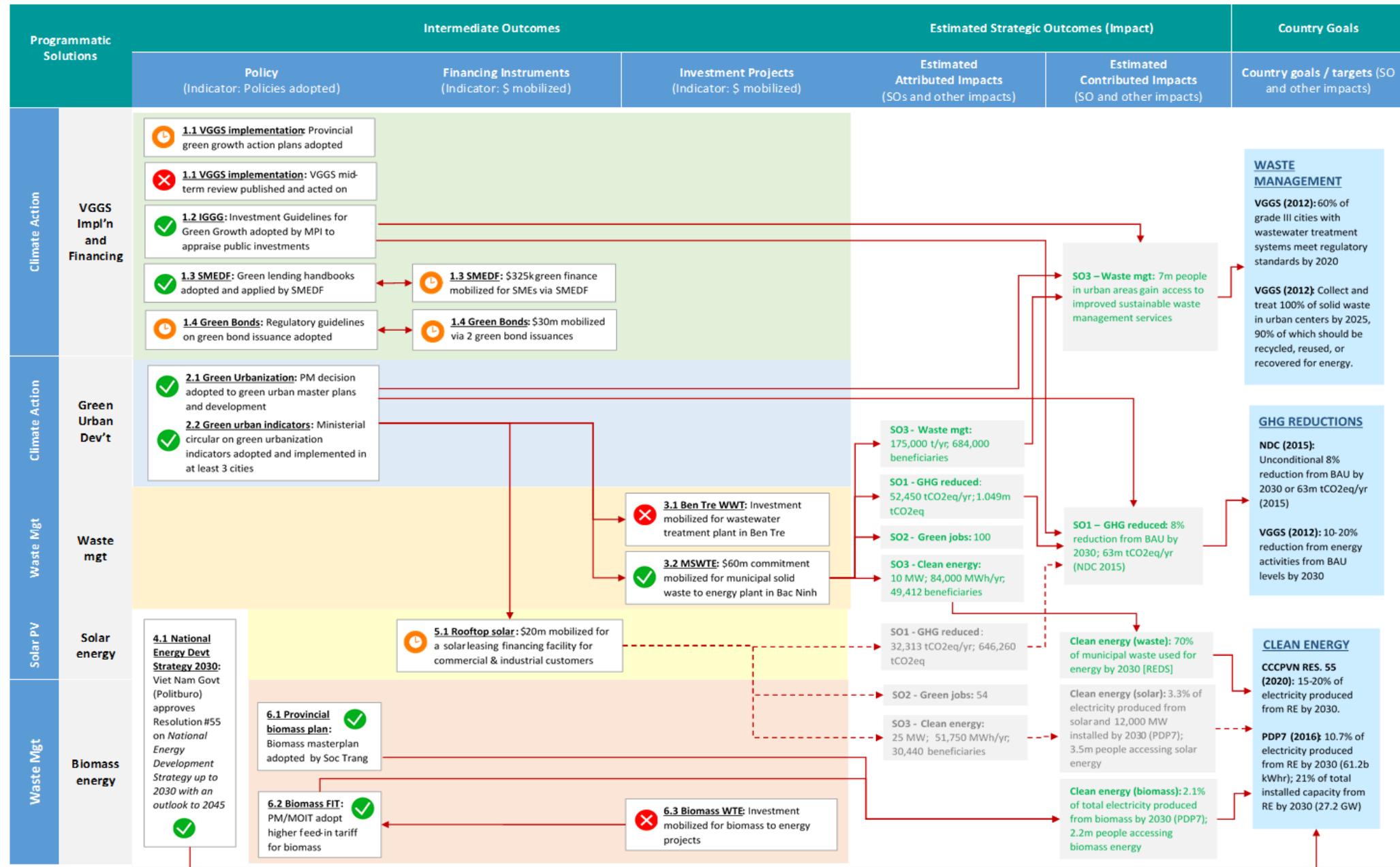
- **Strategic outcomes (Impacts)**: Intermediate outcomes are expected to lead to impacts. Impacts often take the form of GGGI's 6 strategic outcomes (SO). If this is not possible or appropriate, other types of impacts may also be included.
 - SO1 – GHG emissions reduced
 - SO2 – Green jobs created
 - SO3 – Increased access to sustainable services (clean energy, waste management, sustainable transport, sanitation)
 - SO4 – Improved air quality
 - SO5 – Adequate maintenance of natural capital
 - SO6 – Enhanced adaptation to climate change

Consistent with GGGI's [Strategic Outcomes Guidelines](#), impacts are divided into attributed impacts and contributed impacts. All impacts are estimates of what will occur in the future assuming policy, financing and investment outcomes proceed as planned. Where GGGI has successfully completed outcomes that lead to impacts, these are indicated in **green text** and may be counted towards the GGGI-wide targets in *Strategy 2030*. For outcomes that are still in progress, the estimated impacts are indicated in **grey text**.

- **Country targets**: The right side of the diagram summarizes official development goals/targets of the Viet Nam Government that GGGI is helping to achieve through its' program.
- **Causal pathways**: The arrows in the diagram indicate the presence of a causal relationship, where one result causes (or contributes to the causation of) another result. The existence of these causal pathways has been determined through document reviews and interviews carried out by IEU. Causal pathways that have been confirmed are shown with **solid red arrows**. Causal pathways that are possible but not yet confirmed are shown in **dotted red arrows**.

The rest of this report is structured around the intermediate outcomes in the impact pathway diagram. For ease of cross-referencing, the numbering of intermediate outcomes in **Figure 1** corresponds with the numbering of the relevant sections below.

FIGURE 1: Impact pathway diagram for GGGI's Viet Nam program



1. VGGs Financing & Implementation

1.1 Viet Nam Green Growth Strategy implementation

BACKGROUND

In 2012, the Prime Minister formally approved the Viet Nam Green Growth Strategy³ (VGGs), with the overall goal of promoting economic development that is low carbon and enriches natural capital. Three main priorities or ‘strategic tasks’ were set, along with a set of targets for each:

- Reduce GHG emissions and promote renewable energy
- Green industrial production approaches and products
- Promote green urban development and tackle waste and pollution

To achieve these, the VGGs also describes: 17 broad and general ‘solutions’; a high-level implementation roadmap; a structure for steering and coordinating VGGs implementation; and high-level roles and responsibilities.

The Ministry of Planning and Investment (MPI) is the overall government focal point for green growth. The Minister of Planning and Investment serves as Vice Head of the inter-ministerial coordinating board⁴ for VGGs and a supporting secretariat sits in MPI. Other Ministries with prominent roles include the Ministry of Finance (MoF) and Ministry of Natural Resources and Environment (MoNRE). The VGGs also directs national ministries/agencies and People’s Committees at provincial and city level to integrate VGGs priorities into their medium-term (5 year) and short-term (1 year) socio-economic development plans.

In 2014, the Prime Minister subsequently also approved a Green Growth Action Plan (GGAP)⁵ to facilitate implementation of the VGGs for the period 2014-2020. The GGAP lists 66 actions and identifies the responsible lead ministries and financing sources. Of these, 23 actions were tagged as high priorities. The GGAP also further elaborated on the implementation arrangements for VGGs, particularly on preparation of budget submissions and annual reporting of implementation progress by all responsible entities.

MPI is currently the host ministry for GGGI’s operations in Viet Nam and the main counterpart for all GGGI work relating to the VGGs. Specifically, GGGI works with the Department of Science, Education, Natural Resources and the Environment (DSNRE) within MPI on VGGs related activities. Apart from GGGI, several development partners have or are continuing to support Viet Nam with the implementation of the VGGs and GGAP. They include BMZ, UNDP, USAID and Belgium.

OUTPUTS

Between 2017-18, GGGI undertook various outputs relating to the implementation of the VGGs. All were undertaken as part of the *Enhanced policy for green finance* project (Project ID: VN1-2000-1, 2017-18). MPI’s DSNRE is the main counterpart for all these outputs.

³ [Prime Minister Decision No. 1393/QD-TTg, Approval of the National Green Growth Strategy, September 2012](#)

⁴ The Deputy Prime Minister serves as the Head of the Inter-Ministerial Coordinating Board, which in turn reports to the Prime Minister and National Committee on Climate Change.

⁵ [Prime Ministerial decision No. 403/QD-TTG, Approval of the National Action Plan on Green Growth in Viet Nam for the Period 2014-2020, March 2014](#)

- **Output 1 – Support mid-term review of the VGGS:**

The initial intention of this output was to help MPI establish and operationalize the VGGS inter-ministerial coordination mechanism described in that policy. However, this became redundant when the Government later decided to use another existing coordination mechanism rather than create a new one. GGGI instead decided to help MPI to undertake rolling 5-year reviews of the VGGS and partnered with GIZ to support this. As part its contribution, GGGI helped organize 3 regional workshops (North, Central, South) to consult relevant government, private sector, development partner and civil society organizations on VGGS progress between 2012-17. A review report was prepared but ultimately not published.

- **Output 2 – Develop manual on developing provincial GGAPs:**

The VGGS indicates that provincial governments should develop action plans/programs to implement the VGGS and ensure these are integrated into their Socio-Economic Development Plans. GGGI developed a training manual to assist provincial governments with this process.

- **Output 3 – Support Government participation in the P4G initiative:**

Both GGGI and Viet Nam are members of [P4G](#) initiative (*Partnering for Green Growth and the Global Goals 2030*), which aims to harness public-private partnerships at scale to deliver on the SDGs and NDCs. After the launch of P4G in 2018, GGGI provided advice and support to MPI on their engagement with the Clean Energy Investment Accelerator Partnership (CEIAP), a consortium funded by P4G.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 1.1 - Provincial green growth action plans adopted
STATUS	 Outcome in progress

At the time of the review, there was not yet any evidence to indicate that the manual on provincial mainstreaming of green growth had been used by provincial governments for its intended purpose.

OUTCOME DESCRIPTION	Outcome 1.1 - VGGS mid-term review published and acted on
STATUS	 Outcome not achieved

The VGGS review report was reportedly prepared but not published due a decision by the Government. As a result, its recommendations were not acted on.

Regarding GGGI's support to P4G, this appeared to have played a behind-the-scenes role in shoring up MPI support for the CEIA activity funded by P4G. However, there is no explicit policy outcome for the Viet Nam Program beyond this.

CAUSAL LINKS

No causal links from these outcomes to other outcomes / impacts were identified.

1.2 Investment Guideline for Green Growth

BACKGROUND

In 2014, MPI's DSENRE requested GGGI's assistance to embed green growth considerations into Viet Nam's public investment processes. This was intended to support the implementation of the VGGS. GGGI later partnered with UNDP to co-deliver this activity.

The activity involved developing and rolling out the *Investment Guideline for Green Growth* (IGGG). This guideline aimed to help national and provincial investment officials involved in appraising public investment proposals to assess the potential for any investment proposal to contribute to green growth.

The IGGG aimed to broaden the appraisal process to methodically consider a wider range of environmental and social considerations, beyond the usual financial and economic considerations. It was expected that this would better incentivize green growth projects to be developed and channel more public investment towards these.

OUTPUTS

Outputs relating to this area were implemented during 2014-18 as part of the *Urban Green Growth Action* project (Project ID: 2121VN, 2015-16) and *Enhanced policy for green finance* project (Project ID: VN1-2000-1, 2017-18). The counterparts for these outputs included DSENRE and Department of Investment Supervision & Appraisal (DISA), both under MPI.

- **Output 1 – Consultation workshops:** GGGI organized 2 consultation workshops with stakeholders on the draft IGGG in late 2014 and early 2016.
- **Output 2 – Develop the IGGG:** GGGI together with UNDP helped develop the IGGG in 2016.
- **Output 3 – Deliver training on the IGGG:** GGGI developed a 3-day training course for national and provincial officials. It aimed to deepen participants' understanding of green growth and how to apply the IGGG to develop real-life investment proposals. Four trainings were delivered in total – one in December 2015 and three in 2016. Around 164 officials from 41 provinces participated in total.
- **Output 4 - Develop an IGGG Handbook:** While the IGGG was geared more towards developers of public investment proposals, an IGGG Handbook was also developed specifically for national and provincial officials responsible for appraising proposals.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 1.2 - Investment Guidelines for Green Growth adopted by MPI to appraise public investments
STATUS	 Outcome achieved

The intended outcome was for MPI to adopt and implement practices that would result in 'greener' public investments that would deliver greater benefits aligned to the VGGS. This was achieved when the IGGG Handbook was internally adopted by MPI in 2018. This meant that use of the IGGG Handbook became obligatory within MPI's investment appraisal operations for projects in the categories of Group A (those above \$450m) and 'National Importance'. It was reported that the Handbook had begun to be used in the appraisal of projects, eg:

- Land reclamation and resettlement compensation of project Long Thanh Airport – USD 1 bn
- Metro line No. 5, 1st phase in HCMC – EUR 1.6b
- Metro line Nam Thang Long – Tran Hung Dao in Hanoi – USD 1.7b

This is evidence that the IGGG can potentially influence significant sums of public investment in Viet Nam each year.

CAUSAL LINKS

- **Links to contributed impacts:** A key rationale for introducing the IGGG was to direct greater public investment flows towards implementation of the VGGS. Thus, the successful outcome of MPI adopting the IGGG can be counted as a contribution to estimated impacts that reflect the VGGS targets:
 - **SO1 – GHG reduced:** 8% reduction from BAU by 2030 or 63m tCO₂eq/yr
 - **SO3 – Waste management:** 7m people in urban areas with access to improved sustainable waste management services

1.3 SME Development Fund

BACKGROUND

SMEs are an important component of the private sector in Viet Nam. Over 80% of the 600,000 private enterprises in Viet Nam are SMEs. SMEs are estimated to create over a million new jobs and contribute to 50% of GDP annually in Viet Nam. Although there is significant potential to SMEs to play a major role in delivering on the VGGS objectives, this potential remains largely untapped for a variety of reasons. One key reason is access to green financing. SMEs face several barriers on both the demand and supply side.

Both the Government and development partners have sought to address this barrier through various policies and initiatives over the years. One important one is the SME Development Fund (SMEDF) established by the Prime Minister in 2013⁶ and administered by MPI. The SMEDF is one of the largest public funds dedicated to supporting SMEs in Viet Nam, with initial capitalization of around USD 88m from the state budget. Financing from the SMEDF is expected to be channeled through partner banks to SMEs as loans with preferential interest rates. Priority will be given to areas aligned with stipulated SMEDF priorities⁷ which include the theme of ‘environment’, encompassing energy efficiency, renewable energy and environmentally friendly products.

Building on previous work, GGGI had been seeking opportunities to green financing to the private sector. Following consultations with MPI, GGGI was invited to support the SMEDF to develop and operationalize its green lending functions.

OUTPUT

Outputs relating to this area commenced in 2017 and remain ongoing. They were implemented as part of the *Enhanced policy for green finance* project (Project ID: VN1-2000-1, 2017-18) and *Promoting greenovation through SMEs* project (Project ID: VN06, 2019-20). In general, delays were experienced during 2017-19 due in part to changes in other legislation relating to SME support and the impacts this had on the SMEDF.

- **Output 1 – International best practices in green credit:** In 2017, GGGI undertook a study on best practices from other countries in green credit, to help inform the design of a green appraisal process for the SMEDF.
- **Output 2 – Handbooks for green lending:** GGGI supported the SMEDF to specify the green lending criteria to guide the development and assessment of the loan applications from SMEs. These were documented in 2

⁶ Prime Ministerial Decision No. 601/QĐ-TTg, Establishment of an SME development fund, April 2013

⁷ MPI Circular on the list of areas entitled to prioritized assistance from the SME development fund, Circular No. 13/2015/TT-BKHTT, 28 October 2015

Green Credit Handbooks for the manufacturing and agriculture sectors, which are both priority sectors of SMEDF.

- **Output 3 - Training SMEDF and partner bank staff in use of the handbooks:** This output was not carried out due to the delays mentioned above.
- **Output 4 – Develop a grant award mechanism:** As a result of regulatory changes under the Law on SME Support, the scope of the SMEDF was extended in 2019 to include grants, direct debt financing and other financial instruments in addition to loans. GGGI is providing support to design the SMEDF's grants mechanism.
- **Output 5 – Develop an acceleration program:** GGGI was also requested to help develop an acceleration program to complement the grants mechanism. This would include a process to solicit proposals, a judging panel to select the best grant proposals, and capacity building for selected SMEs.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 1.3 - Green lending handbooks adopted and applied by SME Development Fund
STATUS	 Outcome achieved

OUTCOME DESCRIPTION	Outcome 1.3 - \$325k (public) green finance mobilized for SMEs via SME Development Fund
STATUS	 Outcome in progress

The intended (intermediate) outcome of this work is to mobilize finance from the SMEDF towards SME activities that contribute to green growth. No specific target has been set by the SMEDF for green financing to be mobilized. At the time of this review, no green finance had yet been mobilized. This is largely because the SMEDF overall had been experiencing delays. It had only recently begun to formalize partnerships with partner banks and disbursement of finance remains some way off in the future.

However, based on the assistance provided by GGGI, the SMEDF had reportedly agreed to allocate \$325,000 to pilot green loans, but given the status of the SMEDF overall, the time for this to occur has yet to arrive. Whilst this initial commitment is a positive first step, the amount represents a tiny fraction of the overall financing that the SMEDF had at its disposal.

CAUSAL LINKS

No causal links from these outcomes to other outcomes / impacts along the impact pathway were identified.

1.4 Green Bonds

BACKGROUND

To deliver on the objectives of the VGGS and NDCs, it is estimated that Viet Nam will require USD 30 billion in financing, of which government budgets will only cover 30% of this. However, public finance is constrained while Viet Nam's graduation to middle income country status in 2017 also means less access to ODA grants and concessional loans in future. Thus, to meet the financing gap, Viet Nam will need to find more ways to mobilize larger volumes of private finance.

The Ministry of Finance's Green Growth Action Plan for the Finance Sector⁸ has the aim of developing green capital markets and green financial products to mobilize investment. While there is strong interest in green bonds, knowledge and experience with this instrument remains low and gaps in enabling policies and regulations have yet to be addressed. The first two green bonds in Viet Nam were issued as a pilot in 2016 and listed on the Hanoi Stock Exchange, raising USD 25m and USD 4m respectively. No other green bonds have been issued since.

Following consultations with the Government of Luxembourg, Ministry of Finance and other government stakeholders in 2019, GGGI developed a successful funding proposal to support the development of green bonds in Viet Nam.

OUTPUTS

Work in this area is undertaken as part of the *Viet Nam Green Bond Readiness* project (Project ID: VN10, 2020-22) with earmarked funding support from Luxembourg. The project will run from 2020 to 2022 with a total budget of USD 2.7m (EUR 2.4m). At the time of writing, the project had only just begun and no outputs had been completed yet. Outputs planned for delivery are grouped into 3 components and include:

Component 1 – outputs to enhance the regulatory framework for green bonds

- Output 1 – Share international best practices in regulating green bonds with Government officials
- Output 2 – Assess existing regulations on green bonds and draft guidelines on green bond issuance
- Output 3 – Consult with stakeholders on draft guidelines
- Output 4 – Finalize guidelines on green bond issuance

Component 2 – outputs to improve capacity/knowledge of key stakeholders on green bonds

- Output 5 – Study tours on developing a green bond market, including to Luxembourg
- Output 6 – Knowledge on green bond issuance shared with key stakeholders
- Output 7 – Financial educators trained on green bonds
- Output 8 – Lessons from successful green bond issuance documented and shared

Component 3 – outputs to mobilize investment through green bond issuance

- Output 9 – Green bond pilot issuers selected
- Output 10 – Technical assistance provided to issue pilot green bonds

OUTCOMES

OUTCOME DESCRIPTION	Outcome 1.4 - Regulatory guidelines on green bond issuance adopted
STATUS	 Outcome in progress

OUTCOME DESCRIPTION	Outcome 1.4 - \$30m mobilized via 2 green bonds
STATUS	 Outcome in progress

⁸ Minister of Finance Decision 2183/QD-BTC, Financial sector action plan for implementation of the National Green Growth Strategy up to 2020, October 2015

Based on the proposal, there are 2 main outcomes⁹ targeted for achievement:

- Outcome 1 – regulatory guidelines on green bond issuance adopted by MOF for use
- Outcome 2 – two green bonds (government and corporate) issued raising at least USD 30m for green projects

As the project was only just commencing at the time of writing, neither had been achieved yet.

CAUSAL LINKS

No causal links from these outcomes to impacts had yet emerged. However, estimated impacts are likely to arise in future when the 2 green bonds are issued to specific projects.

2. Urban Green Growth

2.1 National Green Urban Development Policies

BACKGROUND

Promoting green urban development in cities is important, given the disproportionately large role that they play in the economic and environmental performance of Viet Nam. They serve as engines of economic growth and were home to around 55% of the country's population in 2018. At the same time, cities are responsible for 70% of Viet Nam's GHG emissions, which have increased over six-fold since the 1990s. Air pollution in Vietnamese cities is amongst the worst in the world, due to rapid increases in car use. Urban sprawl encroaches on surrounding forest and agricultural lands, increasing pollution of soil and water resources.

Urban planning in Viet Nam is shaped by many laws and policies, involving numerous government actors across multiple sectors and different levels of government. Some key policies/laws include, for example:

- Law on Urban Planning (2009)
- Adjustment of Orientation Master Plan for Urban Development until 2025 with a vision to 2050 (2009)
- National Urban Upgrading Program (2009) and National Urban Development Program 2012-20 (2012)
- Resolution on City Classification in Viet Nam (2016)

Policies and laws have generally been superimposed upon one another over time, resulting in a complex, inconsistent, and sometimes contradictory mosaic of policy goals, targets, directions, and requirements. The lack of hierarchical order and alignment between the various policies, laws, decrees, and circulars has, in practice, allowed an ad-hoc approach to urban development to proliferate in Viet Nam.

Beyond this issue of policy fragmentation and weak institutional coordination for urban planning, another challenge is the lack of a green perspective. Most key policies do not explicitly reflect goals and approaches consistent with Viet Nam's overall commitments to green growth and climate change. Indeed, some policies may in fact incentivize the opposite approach. For example, the city classification system, which influences budgetary allocations to local governments, is based on criteria and weightings that could encourage infrastructure development, population growth and urban sprawl over the development of more sustainable and compact cities.

⁹ The proposal mentions a third outcome relating to capacity building. However, this is excluded here as in the project context, and from a causality perspective, improved capacity is not an end in itself but a means to help achieve outcomes 1 and 2.

In recognition of these challenges, section 11 of the VGGS included broad directions for the focus of urban planning to shift to greener objectives (ie: an urbanization approach that achieves more sustainable use and management of natural resources) and the use of a ‘green city index’ to measure progress. Both objectives fall under the responsible areas of the Ministry of Construction (MOC). Building on prior work on green city indicators (see below), GGGI and the MOC began collaborating in 2015 to find a way to mainstream green growth into Viet Nam’s urban planning system.

OUTPUTS

Work in this area was undertaken between 2015-2020 under the following projects: (1) *Urban Green Growth Action* project (Project ID: 2121VN, 2015-16); (2) *Urban Green Growth Action Phase 2* project (Project ID: VN3-2000-1, 2017-18); (3) *Transitioning to a new model of urban development* project (Project ID: VN05, 2018-19).

- **Output 1 – Study on greening the national planning code:** Completed in 2016, GGGI undertook a review of the national planning code to inform how green growth could be mainstreamed into urban planning processes and products.
- **Output 2 – Stocktake of existing green urban development initiatives:** GGGI developed a database that captured all the then-existing green urban development initiatives being undertaken by all development partners in Viet Nam, providing a baseline to inform forward efforts.
- **Output 3 – Action plan for greening urban planning:** This document, completed in 2016, provided a schedule of actions that could be undertaken to mainstream green growth into Viet Nam’s urban planning system.
- **Output 4 - Methodology on selection of pilot cities:** This output supplemented the previous outputs by outlining on a methodology and selection criteria to choose which priority cities to pilot the mainstreaming of green growth. The work was completed in 2017.
- **Output 5 and 6 – Two reports on NDC mitigation options:** Completed in 2018, these studies explored opportunities to implement relevant NDC commitments in the waste and energy sectors, whilst mainstreaming green growth into the urban planning system. These were also converted into an ‘Insight Brief’ published by GGGI.¹⁰
- **Output 7 – Support preparation of PM decision on green urban development:** GGGI provided technical advice to help MOC to prepare the Prime Minister’s decision on green urban development in 2018 – see outcome for further details.

The above 7 outputs contributed to what eventually became a Prime Ministerial decision on green urban development in June 2018 (see below). Following the release of this decision, GGGI undertook some additional outputs to support the implementation of the decision at sub-national level. These included:

- **Output 8 - Guideline on greening city master plans:** To support implementation of the PM decision at city levels, this output was undertaken to guide city-level stakeholders on how to mainstream green growth into city master plans. This work was completed in 2018.
- **Output 9 – Greening Tra Vinh city’s master plan:** As a pilot case study, GGGI prepared a report showing how green growth could be mainstreamed into the master plan of a selected city, Tra Vinh, in line with the directions in the PM decision. This was completed in 2018.

¹⁰ [Achieving Viet Nam’s NDC in the Urban Sector, GGGI Insight Brief 2, March 2019](#)

- **Output 10 – Report on the status of urbanization in Viet Nam:** At MOC's request, GGGI supported MOC to prepare a report on "Transitioning to a new model of urban development", requested by Viet Nam's National Assembly (parliament). This was completed in 2019.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 2.1 - PM decision adopted to green urban master plans and development
STATUS	 Outcome achieved

GGGI's original intention was to facilitate the adoption of a national level policy to promote green city development in Viet Nam. This was achieved, ultimately in the form of a Prime Minister (PM) level decision to approve the Viet Nam Urban Green Growth Development Plan up to 2030 in January 2018.¹¹ The decision directs the MOC, other national ministries, provincial and city governments, to undertake a range of actions including:

- Revising urban master plans and urban development programs to meet green growth and climate objectives
- Prepare plans for the mobilize of resources, technologies and investment towards urban green growth objectives
- Strengthen governance and management for urban green development

It is understood that only a few Prime Ministerial decisions are passed each year. The fact that this policy was adopted is evidence of the high level of commitment that the Government has towards this issue.

While GGGI had hoped to continue supporting the implementation of this decision (and indeed initiated some work to this effect), at the time of writing a decision had been made to discontinue this area of work for the time being. The main reason cited was the difficulties to mobilizing earmarked resources to support this work, as required under GGGI's changing business model.

CAUSAL LINKS

- **Links to other outcomes:** The Prime Ministerial decision on the Viet Nam Urban Green Growth Development Plan aims to help achievement of the priorities/targets in the VGGS, which includes solid waste/wastewater treatment and renewable energy development in urban areas. These priorities informed GGGI choices to aim program towards other outcomes along the impact pathway, including:
 - Outcome 3.1 – Investment mobilized for waste treatment plant in Ben Tre
 - Outcome 3.2 - \$60m commitment mobilized for municipal solid waste to energy plant in Bac Ninh
 - Outcome 5.2 - \$20m mobilized for a solar leasing financing facility for commercial and industrial customers
- **Links to contributed impacts:** The successful adoption of the Prime Ministerial decision can be counted as a contribution to estimated impacts that reflect the VGGS targets:
 - *SO1 – GHG reduced:* 8% reduction from BAU by 2030 or 63m tCO2eq/yr
 - *SO3 – Waste management:* 7m people in urban areas with access to improved sustainable waste management services

¹¹ [Prime Ministerial Decision No. 84/QD-TTg, Approval of the Viet Nam Urban Green Growth Development Plan up to 2030, January 2018](#)

2.2 Green City Indicators

BACKGROUND

As noted in Section 2.1, Viet Nam faces a range of challenges as the country becomes increasingly urbanized. The VGGS (section 11) included broad directions for the focus of urban planning to shift to greener objectives (ie: an urbanization approach that achieves more sustainable use and management of natural resources) and the use of a ‘green city index’ to measure progress.

In 2014, MOC and GGGI agreed to begin working together on the development of green city index. Although several other development partners had developed similar indices before, the MOC sought GGGI’s assistance to develop something simpler and more practical that could be applied within the Viet Nam context.

OUTPUTS

Work in this area was undertaken between 2014-16 under the *Urban Green Growth Action* project (Project ID: 2121VN, 2015-16) and *Urban Green Growth Action Phase 2* project (Project ID: VN3-2000-1, 2017-18).

- **Output 1 - Develop green city indicators:** This report was completed in 2015 and describes 24 indicators and reasons for selecting them. It also proposes a method for combining the indicators into an index later. The report also included a review of similar indices developed internationally. Consultation workshops were also conducted with city officials from 3 selected cities.
- **Output 2 - Support preparation of an MOC circular:** In 2016, GGGI supported the MOC to prepare a circular for implementation of the green city indicators for the Minister of Construction to approval. Support provided included drafting of the circular and stakeholder consultations.
- **Output 3 – Support implementation of the green city indicators circular in 3 cities:** GGGI worked with 3 cities – Tra Vinh, Da Lat and Yen Bai - to pilot implementation of the circular. The work, completed in 2018, included developing 3 advisory reports for the 3 City People’s Committees and conducting 3 regional training courses which were attended by around 250 officials.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 2.2 - Ministerial circular on green urbanization indicators adopted and implemented in at least 3 cities
STATUS	 Outcome achieved

GGGI’s aim was to assist the MOC formalize the use of green city indicators in Viet Nam’s urban planning and management system, in line with the directions of the VGGS and intent of the MOC.

This was achieved with the approval of the *Circular on Urban GG Indicators and its Implementation* (Ministerial Circular No. 01/2018/TT-BXD) on 5 January 2018. The circular describes a final set of 24 environmental, economic and social indicators and sets out the data collection and reporting obligations for different city-level stakeholders.

Until now, 8 cities have developed their reports on Urban GG indicators. Three cities did this with GGGI’s support, including Tra Vinh, Da Lat and Yen Bai. Five other cities have also done this with MOC support including Vung Tau, Ben Tre, Dong Ha, Hai Duong and Ha Noi. Similar to GGGI’s work in the green urban planning area (Outcome 2.1), GGGI had made a strategic decision to exit this area of work for the time being, due to insufficient opportunity to mobilize earmarked resources.

CAUSAL LINKS

Same as the ‘Causal Links’ section for 2.1 – National Green Urban Development Policies.

3. Waste Management

3.1 Ben Tre Wastewater Treatment

BACKGROUND

GGGI’s President and Director-General launched the *Inclusive Green Growth Partnership* at COP21 in Paris in 2015.¹² This flagship initiative by GGGI was intended to accelerate financing to green growth projects in emerging and developing economies. A key element of the strategy was for GGGI to partner with MDBs to collaborate in greening their pipeline of investment projects.

To implement this strategy, country teams were requested to seek out opportunities with MDBs to partner on the development of investment projects. In Viet Nam, exploratory discussions with several MDBs led to an agreement to collaborate with ADB on preparing a feasibility study for a wastewater treatment plant in Ben Tre, a city of over 150,000 people in the Mekong delta. Funding for this work was given approved and work commenced in 2016. The GGGI-ADB collaboration on the Ben Tre project was the first of its type under the *Inclusive Green Growth Partnership*, and at the time, was widely promoted internally as a model for other country teams to emulate.

OUTPUTS

Work in this area was undertaken in 2016 under the *Project Design & Preparation* project (Project ID: 3104XC, 2015-16).

Output 1 – Feasibility study for Ben Tre wastewater treatment plant

GGGI developed a feasibility study that included a technology choice assessment, cost estimates, economic and financial analysis, environmental and social safeguards assessments, climate change adaptation and mitigation assessment, and stakeholder engagement plan. GGGI held consultations and multiple workshops with city, provincial and central government stakeholders, as well as the ADB.

The output was completed and presented to ADB and Vietnamese Government stakeholders in December 2016. In the end, the study identified and recommended a lower cost, less energy-intensive design option for a wastewater treatment plant costing around USD 33 million.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 3.1 - Investment mobilized for wastewater treatment plant in Ben Tre	
STATUS		Outcome not achieved

The planned outcome was for the project design to be adopted by ADB and included in its PPTA and lending program, eventually unlocking USD 30-35m from ADB and the Government. At the time of this review, this outcome had not

¹² See GGGI [press release](#) on the launch of the Inclusive Green Growth Partnership, 8 December 2015

been achieved as the Government of Viet Nam and ADB have not yet reached agreement to proceed with the project due to factors including unfavorable macroeconomic conditions (GDP-debt ratio) for wastewater treatment projects and the increased costs of ADB loans as a result of Viet Nam's graduation to MIC status. Following this work, GGGI HQ changed its strategy with respect to partnering with MDBs, and as a result, no similar collaborations of this kind were pursued in-country.

CAUSAL LINKS

Since the intended outcome did not eventuate, no subsequent causal links to any impacts were established.

3.2 Municipal Solid Waste to Energy

BACKGROUND

Like many other emerging economies, Viet Nam is experiencing challenges in managing growing volumes of waste driven by increasing urbanization, population growth and rising prosperity. Total municipal solid waste generated in Viet Nam was around 27.8 million tons in 2015, growing at 10-12% per annum since 2007. The waste sector in Viet Nam is estimated to be responsible for around 7% of total GHG emissions, according to Viet Nam's Biennial Update Report to the UNFCCC in 2017. Municipal solid waste in Viet Nam is primarily dumped at mostly uncontrolled landfills, with limited infrastructure to recover resources or energy from waste.

Finding solutions to these waste challenges is a high priority for the Government at both national and subnational levels. For example, the *National Strategy for Integrated Management of Solid Waste up to 2025 with a vision to 2050* sets a target of collecting and treating 100% of municipal solid waste up to environmental standards by 2025, with at least 90% of this recycled, reused, or converted into energy or fertilizer.¹³ Various incentives have been established to encourage the development of municipal solid waste to energy (MSWTE) projects, including a feed-in tariff level that is the highest for all renewable energy types in Viet Nam.

In 2017, GGGI identified an opportunity to collaborate with the Finnish-funded *Energy and Environment Partnership Mekong Program* on MSWTE. The Program provides grants to support clean energy investments in four Mekong countries including Viet Nam. GGGI worked with the Finnish Embassy to shortlist and select a project developer participating in the Program that would also be interested in receiving support from GGGI. This process resulted in GGGI partnering with a Vietnamese developer on a MSWTE project in Bac Ninh province.

OUTPUT

Work in this area was implemented mostly during 2017-18 as part of the *Urban Green Growth Action Plan Phase 2* (Project ID: VN3-2000-1, 2017-18).

Output 1 – Develop a financing structure and support arrangement of financing for a MSWTE facility in Bach Ninh

The developer had undertaken feasibility studies and determined that that MSTWE facility with a 500 t/day capacity and 10 MW output was commercially feasible. Despite this, financing was not assured, as MSWTE is viewed as risky amongst local banks, due to the heavy capex requirements and limited experience with such projects Viet Nam.

GGGI's role was to help secure financing for the project by structuring the financing deal and engaging additional financers. All other aspects of developing the project were handled by the developer. Specifically, GGGI:

¹³ [PM Decision No. 2149/QD-TTg, National Strategy for Integrated Management of Solid Waste up to 2025 with a vision to 2050, December 2009](#). This target is also reflected in the VGGS.

- Helped identify sources of concessional finance from international development finance institutions interested in green projects, that could be blended with commercial finance from local banks and thus reduce the perceived risks for them.
- Supporting the developer to engage with international financers, with whom they had little prior experience in working with.

OUTCOME

OUTCOME DESCRIPTION	Outcome 3.2 - \$60m commitment mobilized for municipal solid waste to energy plant in Bac Ninh
STATUS	 Outcome achieved

The intended outcome was to secure initial investment commitment for the MSWTE project, and this has been achieved. Based on the financing arrangements developed by GGGI, a total investment commitment of USD 60m was mobilized to meet the capex costs of the project. This total amount comprises approximately USD 22m in developer equity and USD 37.5m in debt financing from several lenders:

- Finnfund (DFI) – USD 10m
- Finnvera (Exim Bank) – USD 10m
- BIDV (local bank) – USD 8m
- BIO – USD 10m

Based on this successful initial experience, GGGI is in the process of exploring further opportunities to scale up its work in the waste-to-energy area in Viet Nam, though no specific ways forward had yet been identified at the time of writing.

CAUSAL LINKS

- **Links to attributed impacts:** The MSWTE plant is expected to lead to the following estimated impacts.¹⁴
 - **SO1 – GHG reduced:** 52,450 tCO2eq/yr or 1.049m tCO2eq over the total estimated life of the project
 - **SO2 – Green jobs created:** 100 jobs (60 for construction phase, 40 for operation phase)
 - **SO3 – Waste management:** 175,000 t/yr of waste processed, with 684,000 people benefiting from improved and more sustainable waste management services.
 - **SO3 – Clean energy:** 10 MW installed capacity, estimated to produce 84,000 MWh/year in clean electricity, providing an estimated 49,412 people with access to clean energy
- **Links to contributed impacts:** The impacts attributable to this project will contribute to the following Government goals/targets:
 - **SO1 – GHG reduced:** 8% reduction from BAU by 2030 or 63m tCO2eq/yr
 - **SO3 – Waste management:** 7m people in urban areas with access to improved sustainable waste management services
 - **SO3 – Clean energy:** 70% of municipal waste used for energy by 2030

¹⁴ Figures are based on calculated estimates provided by the GGGI Viet Nam team.

4. Renewable Energy

4.1 National Energy Development Strategy

BACKGROUND

In 2015, the Prime Minister approved the *Viet Nam's Renewable Energy Development Strategy up to 2030 with an outlook to 2050*.¹⁵ This policy outlines the Government's long-term strategy for developing renewable energy in Viet Nam. It includes descriptions of:

- broad objectives and targets for renewable energy production and use
- key policy and regulatory reforms needed to promote development of renewable energy
- roles, responsibilities, and implementation arrangements for the strategy
- emission reduction targets, which form the basis of Viet Nam's NDC

The Ministry of Industry and Trade (MOIT) is the lead agency responsible for overseeing implementation of the strategy. One of its obligations under the strategy is to "develop a roadmap for the implementation of the Decision and submit for the Prime Minister's consideration and approval".¹⁶

To meet this obligation, the Minister of Industry and Trade tasked all departments within MOIT to develop workplans which could be combined to form this roadmap. MOIT requested support from GGGI to provide analytical inputs to inform the preparation of some of these workplans.

OUTPUTS

Outputs relating to this area were implemented during 2017-18 as part of the *Scaling up Biomass Waste to Energy* (Project ID: VN2-2000-1, 2017-18). MOIT was the main counterpart.

Output 1 – Deliver analysis and recommendations for an implementation roadmap for Viet Nam's Renewable Energy Development Strategy up to 2030 with an outlook to 2050.

As input into MOIT's roadmap, GGGI provided a report which analyzed: the current status of the renewable energy market; challenges and opportunities with the market in Viet Nam; benchmarking against international trends; and policy recommendations to accelerate development of renewable energy in Viet Nam.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 4.1 - Viet Nam Government (Politburo) approves Resolution #55 on <i>National Energy Development Strategy up to 2030 with an outlook to 2045</i>
STATUS	 Outcome achieved

¹⁵ [Prime Ministerial Decision No. 2068/QD-TTg, Approval of Viet Nam's Renewable Energy Development Strategy up to 2030 with an outlook to 2050, November 2015](#)

¹⁶ Stated under Section VII (1) of the Strategy

The intended outcome was GGGI's analytical inputs to be incorporated into MOIT's roadmap, and then submitted the Prime Minister to approval. Ultimately, the original intended outcome was not achieved as it was later decided that the roadmap did not require Prime Ministerial approval.

However, the analysis provided by GGGI was instead used to inform a new medium-term energy strategy released in 2020 by the Government: *Politburo Resolution 55-NQ/TW on Orientations of Viet Nam's National Energy Development Strategy to 2030 and outlook to 2045*. A significant feature of this policy was a decision to raise the target for the share of electricity produced from renewable sources (excluding hydropower) from 10% to 15-20% by 2030. This target is expected to be cascaded down into other major energy policies in future, including the next Power Development Plan, likely to cover the period between 2021-2030.

CAUSAL LINKS

- **Links to contributed impacts:** This policy change contributes directly to the Government's goals/targets for clean energy, and in fact GGGI has played a contributing role raising the ambition level for these targets, from:
 - **SO3 – Clean energy:** 10.7% of electricity produced from renewable energy by 2030 (61.2b kWhr) and 21% of total installed capacity from RE by 2030 (27.2 GW) under the Power Development Plan 7; to
 - **SO3 – Clean energy:** 15-20% of electricity produced from renewable energy by 2030 under the Politburo Resolution 55.¹⁷

5. Solar Energy

5.1 Solar Leasing Finance Facility

BACKGROUND

The Government announced a feed-in tariff for solar in 2018. This policy change, combined with falling costs of solar, has made solar projects increasingly viable and attractive relative to other types of renewables in Viet Nam. Under GGGI's Viet Nam CPF 2016-2020, GGGI has prioritized the promotion of renewable energy as one of its key outcomes. To explore potential entry points and suitable niches for GGGI in the solar market, the country team undertook a market assessment during 2018.

Based on this, GGGI decided to initiate a project focused on solar for commercial and industrial firms in industrial parks. Additionally, it was decided that GGGI would focus on the financing aspects of this, in order to complement the existing work of the *Clean Energy Investment Accelerator (CEIA)* initiative¹⁸ which was already working on pipeline development for solar projects for the commercial and industrial sectors in Viet Nam.

With 328 industrial parks in Viet Nam, there is large potential for deployment of solar in this niche. The potential of residential and commercial solar rooftop is estimated at around 5 GW (equivalent to around 40% of the Government's target of 12 GW installed capacity for solar by 2030). Very little of this potential has been realized yet.

One of the key barriers is financing. Investing in solar involves high upfront CAPEX investments and lengthy payback periods (7-10 years). These are particularly unattractive to commercial and industrial firms who are often renting premises on time horizons shorter than this. GGGI's work focuses on developing an OPEX-oriented solar leasing

¹⁷ Total installed capacity of power sources and electricity generation output in Resolution 55 are consistent with levels described in the PDP7, hence if achieved, the percentage-based targets do represent an increase in clean energy capacity/generation.

¹⁸ CEIA is an initiative jointly led by Allotrope Partners, World Resources Institute (WRI) and the US National Renewable Energy Laboratory (NREL), with funding support from P4G (which GGGI is a member of).

("solar as a service") financing solution, where ESCOs absorb these upfront costs and recover them through leasing arrangements that are more financially attractive for commercial and industrial customers.

OUTPUTS

Work in this area was implemented during 2019-20 as part of the *Viet Nam Solar Rooftop Leasing Finance Facility* project (Project ID: VN04, 2018-2020).

Output 1 – Development of a Solar Finance Facility for the commercial and industrial market

The planned output was the design of a solar leasing finance facility, which attract capital from multiple investors and be implemented through a local bank.

To date, GGGI has undertaken several activities towards this end, including:

- Conduct a feasibility study, including assessment of the target market and financial analysis
- Identifying, sounding and matching of potential investors, both domestic banks and international development financers
- Undertaking a legal assessment, including the optimal legal structure for the facility
- Supporting development of and discussions on term sheet arrangements

At the time of the review, the latest progress was that one pair of international and domestic financers (GuarantCo¹⁹ and TP Bank) were in the advanced stages of discussing terms for a proposed financing deal. A second pairing was also being explored between AFD and Vietcom Bank. Work on the output was expected to be completed by the end of 2020.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 5.1 - \$20m mobilized for a solar leasing financing facility for commercial and industrial customers
STATUS	 Outcome in progress

The intended outcome is to see mobilization of investment commitment to the Solar Leasing Finance Facility. At the time of writing, delivery of the output was still in progress and so achievement of the outcome was still pending. The latest available estimate of the amount of investment to be mobilized was USD 20-40m, with a potential upper range of USD 100m. Some emerging issues were reported relating to the desire of prospective financers to see details of the potential project pipeline before committing to the leasing facility. This work, led by CEIA, is still at an early stage of progress, and is affecting efforts on the financing side to some extent. GGGI Viet Nam is monitoring this issue closely.

CAUSAL LINKS

- **Links to attributed impacts:** If the outcome is achieved, rooftop solar installations financed by this facility is expected to result in the following estimated impacts:
 - **SO1 – GHG reductions:** 32,313 tCO₂eq/yr or around 646,260 tCO₂eq over the average life of rooftop solar installations
 - **SO2 – Green jobs:** 54 of green jobs created
 - **SO3 – Clean energy:** 25 MW installed capacity, 51,750 MWh/yr of clean electricity produced, providing around 30,440 people with access to clean energy

¹⁹ A firm owned and funded by the UK, Australia, Sweden, Switzerland and Netherlands/FMO, which aims to help mobilize local investment for infrastructure and develop financial markets in developing countries. <https://guarantco.com/>

- **Links to contributed impacts:** The estimated impacts attributable to the facility are expected to contribute to the following Government goals/targets:
 - **SO1 – GHG reduced:** 8% reduction from BAU by 2030 or 63m tCO₂eq/yr
 - **SO3 – Clean energy:** 12 GW of installed capacity from solar and 3.3% of electricity produced from solar by 2030²⁰

6. Biomass

6.1 Provincial Plan on Biomass Energy

BACKGROUND

Key Government policies such as the *Renewable Energy Development Strategy up to 2030 with an outlook to 2050* and the *Revised National Power Development Masterplan for 2011-2020* (PDP7) set a strategic direction for Viet Nam to expand the supply of electricity from renewable sources, including biomass. Under the PDP7, a target was set to supply 1.2% and 2.1% of electricity from biomass sources by 2025 and 2030 respectively. To implement these strategies, government agencies at national and provincial level were directed to prepare specific masterplans for different types of renewable energy, including biomass.²¹

In 2016, GGGI released its Viet Nam CPF 2016-2020 which selected renewable energy as one of the priority thematic areas for the country program. Following a process by GGGI to find a suitable entry point into this sector, a partnership was established with GIZ to collaborate on various activities relating to biomass-to-energy.²² At the time, biomass was reviewed as a renewable energy sub-sector with relatively more momentum – for example, it was the first to receive a feed-in tariff from the Government.

One part of the GGGI-GIZ collaboration was to help 4 selected provinces in the Mekong delta to develop and adopt masterplans for biomass energy. GGGI agreed to work with Soc Trang while GIZ worked on 3 other nearby provinces.

OUTPUTS

Work in this area was undertaken during 2017-18 as part of the *Scaling up Biomass Waste to Energy* (Project ID: VN2-2000-1, 2017-18). GIZ, MOIT and the Soc Trang Provincial Department of Industry and Trade (DOIT) were the main partners for this work.

Output 1 – Support development of a provincial masterplan for biomass energy

This was the main output planned, with Soc Trang selected as the province for GGGI to support. The output was successfully delivered in 2018. The masterplan assessed the needs, opportunities, and challenges for developing biomass energy projects in the province and explored inter-provincial issues (eg: feedstock flows) with other provinces that GIZ was supporting. The work also included at least 2 major consultation workshops around the development and release of the draft masterplan with government and private sector representatives.

²⁰ Both targets from the Revised National Power Development Masterplan for 2011-2020 (PDP7).

²¹ Renewable energy masterplans at national level generally cover projects over 50 MW while masterplans at provincial level cover projects below 50 MW.

²² GIZ and GGGI signed a Letter of Intent in September 2016 and then an MOU in 2017 to collaborate on biomass waste to energy activities in Viet Nam.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 6.1 - Biomass masterplan adopted by Soc Trang
STATUS	 Outcome achieved

The intended outcome was for the Soc Trang provincial government to adopt the provincial masterplan for biomass energy. This was achieved in 2018 when the plan was approved by the Provincial People's Committee. The Masterplan identified 12-68 MW of potential biomass energy, depending on feed-in tariff levels. It also identified a pipeline of 5 biomass-to-energy projects with potential investment value of USD 43m, as well as policy actions to help reduce barriers to investment in such projects.

CAUSAL LINKS

- **Links to contributed impacts:** The achievement of this outcome is expected to contribute to the following Government goals/targets:
 - **SO3 – Clean energy:** 2.1% of electricity produced from biomass energy by 2030, estimated to provide around 2.2m people with access to clean electricity.

6.2 Feed-in Tariffs for Biomass Energy

BACKGROUND

Part of the GGGI's rationale for working on investment projects is not just to mobilize finance for them, but also to learn from those first-hand experiences to identify and address policy and institutional barriers that hinder investment into those projects. This is one of the applied ways in which GGGI tries to scale up green finance and impacts.

As part of its collaboration with GIZ, GGGI worked on developing pre-feasibility studies for several biomass projects in the sugar industry, as described in Section 6.3 below. Based on this experience, one of the main challenges encountered to the financial viability of these projects was the low feed-in tariff level (USD 5.8 cents/kWh) for biomass. To ensure these lessons were captured and fed back to policymakers in MOIT, GGGI and GIZ decided to prepare a report analyzing how changes to the tariff could help increase investment and realize Viet Nam's biomass energy potential.

OUTPUTS

This work was undertaken in collaboration with GIZ during 2018 as part of the *Scaling up Biomass* project (Project ID: VN2-2000-1, 2017-18).

Output 1 – Develop policy advice on feed-in tariff levels for biomass projects in sugar industry

A publication titled *Sweetening the Deal for Biomass Energy in Viet Nam's Sugar Industry*²³ was prepared and released in December 2018. Analysis covered in the document included:

- overview of rising energy demands in Viet Nam
- the role of renewable energy and specifically biomass energy in meeting this demand

²³ [Insight Brief 01: Sweetening the deal for biomass energy in Viet Nam's sugar industry, GGGI & GIZ, November 2018](#)

- current policy framework for developing biomass energy in Viet Nam
- analysis of how increased feed-in tariff levels, along with other enabling measures, could affect biomass energy production in the sugar industry
- benefits of scaling up biomass energy

The analysis showed that raising the tariff from USD 5.8 cents/kWh to USD 9.35 cents/kWh was needed to capture the full potential of 737 MW biomass energy in the sugar industry (up from the existing 352 MW of installed capacity). Since the introduction of this tariff in 2014²⁴, no new grid-connected biomass power projects have been constructed.²⁵ Other measures recommended included improvements to power purchase agreements, enabling multifuel options, and promoting use of financing options such as special purpose vehicles.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 6.2 - Prime Minister / MOIT adopt higher feed-in tariff for biomass
STATUS	 Outcome achieved

The intended outcome was to influence MOIT to adopt some of the policy recommendations provided in the publication. In March 2020, the Prime Minister approved²⁶ a proposal from MOIT to raise the feed-in tariff for biomass to USD 7.03 - 8.46 cents/kWh (depending on the technology) to better stimulate investment in biomass energy projects. Enquiries made to MOIT during this review validated the fact that analysis provided by GGGI did inform their decision to propose this change.

CAUSAL LINKS

- **Links to contributed impacts:** The achievement of this outcome is expected to contribute to the following Government goals/targets:
 - **SO3 – Clean energy:** 2.1% of electricity produced from biomass energy by 2030, estimated to provide around 2.2m people with access to clean electricity.

EVIDENCE

IEU reviewed 5 relevant studies on the effects of FIT policies in almost 500 national/subnational jurisdictions over a period of 7-22 years. The studies provided supporting evidence that, if designed well and deployed in the right circumstances, conducive FIT levels do lead to increased investment into renewable energy markets, especially in the early stages. This was also seen in Viet Nam for example, where the introduction of a FIT for wind energy saw installed capacity rise from 8 MW to 50 MW between 2008 and 2015.²⁷ Some studies show adverse effects of FIT policies if poorly designed or where the length of the power purchase agreements were inadequate.

²⁴ Decision No. 24/2014/QD-TTg, 24 April 2014 on support mechanism for the development of biomass power projects in Viet Nam.

²⁵ [Viet Nam increases feed-in tariffs for biomass power projects, Baker McKenzie, March 2020](#)

²⁶ Decision No. 08 amending Decision No. 24/2014/QD-TTg, 24 April 2014 on support mechanisms for the development of biomass power projects in Viet Nam.

²⁷ *Implementation of NDCs: Viet Nam*, German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, 2017

6.3 Biomass Energy Projects

BACKGROUND

Key Government policies such as the *Renewable Energy Development Strategy up to 2030 with an outlook to 2050* and the *Revised National Power Development Masterplan for 2011-2020* (PDP7) set a strategic direction for Viet Nam to expand the supply of electricity from renewable sources, including biomass. Under the PDP7, a target was set to supply 1.2% and 2.1% of electricity from biomass sources by 2025 and 2030 respectively.

In 2016, GGGI released its Viet Nam CPF 2016-2020 which selected renewable energy as one of the priority thematic areas for the country program. Following a process by GGGI to find a suitable entry point into this sector, a partnership was established with GIZ to collaborate on various activities relating to biomass energy.²⁸ At the time, biomass was viewed as a renewable energy sub-sector with relatively more momentum – for example, it was the first to receive a feed-in tariff from the Government.

One part of the GGGI-GIZ collaboration was to develop a pipeline of biomass energy projects in the sugar industry for investment, as a concrete way of helping the Government progress towards their biomass energy targets.

OUTPUTS

Work in this area was implemented during 2017-18 as part of the *Scaling up Biomass project* (Project ID: VN2-2000-1, 2017-18).

Output 1 – Conduct prefeasibility studies for biomass energy projects in the sugar industry

GGGI and GIZ first worked with the Vietnamese Sugar and Sugarcane Association (VSSA) to identify suitable and willing sugar companies to work with. From this screening process, 5 firms were selected to proceed to prefeasibility study work. Of this total, it was agreed that GGGI and GIZ would each support 2 and 3 studies respectively.

The prefeasibility studies were completed in early 2018, and from these, one (with Lam Son Sugar Mill or LASUCO) was selected to proceed to financing support stage for a 25 MW biomass energy plant. GGGI then began to undertake various activities including identifying potential investors, preparation of investor materials and deal documents, and arranging an investor meeting.

OUTCOMES

OUTCOME DESCRIPTION	Outcome 6.3 - Investment mobilized for biomass to energy projects	
STATUS		Outcome not achieved

The intended outcome was to mobilize investment commitment to at least one of the biomass projects being developed by GGGI/GIZ. However, this was ultimately not achieved. In late 2018, GGGI was informed that the firm no longer wished to proceed with the project. One key reason given was the firm's desire to focus on its core (sugar) business, due to challenging industry conditions being experienced at the time. Another key reason was financial viability/attractiveness of the proposed biomass project, due partly to the low feed-in tariff for biomass. At the time of the review, GGGI had decided to shift its focus to other renewable energy areas (eg: solar), and there were no plans to return to work on the biomass area.

²⁸ GIZ and GGGI signed a Letter of Intent in September 2016 and then an MOU in 2017 to collaborate on biomass waste to energy activities in Viet Nam.

CAUSAL LINKS

- **Link to Biomass Feed-in Tariff (Outcome 6.2):** Although unsuccessful, GGGI's experience in working on these pre-feasibility studies provided valuable first-hand insights into the policy and institutional barriers facing biomass projects. This led GGGI, together with GIZ, to capture and publish these lessons and recommend changes to the biomass feed-in tariff level to MOIT policy makers. See Outcome 6.2 for further details on this work.

Annex 1 – List of projects reviewed

No.	Year	Project title	Funding
1	2015-16	Urban Green Growth Action	Core
2	2017-18	Urban Green Growth Action, Phase 2	Core
3	2015-16	Project Design and Preparation	Core
4	2017-18	Scaling Up Biomass Waste to Energy	Core
5	2017-18	Enhanced Policy for Increased Green Finance in Viet Nam	Core
6	2019-19	Transitioning to a New Model of Urban Development in Viet Nam	Core
7	2018-20	Viet Nam Distributed Solar – Solar Rooftop Leasing Finance	Core
8	2019-20	Promoting Greenovations through SMEs and Start-ups in Viet Nam	Core
9	2020-22	Viet Nam Green Bond Readiness Program	Earmarked

Annex 2 – List of documents reviewed

No.	Title	Source	Year
1.1 VGGS Implementation			
1	Viet Nam Green Growth Strategy	Viet Nam Government	2012
2	Green Growth Action Plan	Viet Nam Government	2014
3	Intended Nationally Determined Contribution of Viet Nam	Viet Nam Government	2016
4	5-year evaluation / review of the VGGS	GIZ	2017
5	Training Material – Mainstreaming Green Growth into Provincial Development Plan	GGGI	2018
6	VGGS, NDC, VSDGs Nexus Study	GGGI	2019
7	EOY Report 2017 – Enhanced Policy for Increased Green Finance in Viet Nam	GGGI	2017
8	EOY Report 2018 – Enhanced Policy for Increased Green Finance in Viet Nam	GGGI	2018
1.2 IGGG			
1	Viet Nam Green Growth Strategy	Viet Nam Government	2012
7	EOY Report 2017 – Enhanced Policy for Increased Green Finance in Viet Nam	GGGI	2017
8	EOY Report 2018 – Enhanced Policy for Increased Green Finance in Viet Nam	GGGI	2018
9	EOY Report 2015 – Viet Nam Urban Green Growth Action	GGGI	2015
10	EOY Report 2016 – Viet Nam Urban Green Growth Action	GGGI	2016
11	Investment Guidelines for Green Growth in Viet Nam	MPI and GGGI	2014
12	Handbook on applying the IGGG in the public investment appraisal process	Viet Nam Government	2017
1.3 SMEDF			
1	Viet Nam Green Growth Strategy	Viet Nam Government	2012
7	EOY Report 2017 – Enhanced Policy for Increased Green Finance in Viet Nam	GGGI	2017
8	EOY Report 2018 – Enhanced Policy for Increased Green Finance in Viet Nam	GGGI	2018
13	PIN 2019 – Promoting Greenovation through SMEs Project	GGGI	2019
14	Decision on Establishing Medium and Small Enterprise Development Fund	Viet Nam Government	2013
15	International Best Practices on Green Credit for SME	GGGI	2017
16	Green Credit Handbook – Manufacturing	GGGI	2017
17	Green Credit Handbook – Forestry	GGGI	2017
18	MPI Circular on the list of areas entitled to prioritized assistance from the SME development fund	Viet Nam Government	2015
1.4 Green Bonds			

No.	Title	Source	Year
1	Viet Nam Green Growth Strategy	Viet Nam Government	2012
2	Green Growth Action Plan	Viet Nam Government	2014
3	Intended Nationally Determined Contribution of Viet Nam	Viet Nam Government	2016
19	Logframe – Viet Nam Green Bond Readiness Program	GGGI	2020

2.1 Green Urbanization

1	Viet Nam Green Growth Strategy	Viet Nam Government	2012
9	EOY Report 2015 – Viet Nam Urban Green Growth Action	GGGI	2015
10	EOY Report 2016 – Viet Nam Urban Green Growth Action	GGGI	2016
20	EOY Report 2017 – Viet Nam Urban Green Growth Action Phase 2	GGGI	2017
21	EOY Report 2018 – Viet Nam Urban Green Growth Action Phase 2	GGGI	2018
22	PIN 2018 – Transitioning to a New Model of Urban Development	GGGI	2018
23	PIN 2019 – Transitioning to a New Model of Urban Development	GGGI	2019
24	Mitigation options for mainstreaming in urban green growth strategy	GGGI	2016
25	Action Plan for Mainstreaming Urban Green Growth Standard Practices into the Urban Planning System for Viet Nam: 2016-2020	GGGI	2016
26	Technical Report – The methodology on Selection Pilot Cities for NDC and Green Growth Implementation	GGGI	2017
27	NDC Report – Waste Management with the Green Growth Potential Development Objectives	GGGI	2017
28	Insight Brief 02 – Achieving Viet Nam's NDC in the Urban Sector	GGGI	2019
29	Report – Transitioning to a New Model of Urban Development	GGGI	2019
30	Decision on Urban Green Growth Development Plan to up 2030	GGGI	2018
31	Law on Urban Planning	Viet Nam Government	2009
32	Resolution on City Classification in Viet Nam	Viet Nam Government	2016
33	Discussion Paper on Urban Planning Code for Viet Nam	GGGI	2016
34	Greening Tra Vinh city's master plan	GGGI	2020

2.2 Green urban indicators

1	Viet Nam Green Growth Strategy	Viet Nam Government	2012
9	EOY Report 2015 – Viet Nam Urban Green Growth Action	GGGI	2015
10	EOY Report 2016 – Viet Nam Urban Green Growth Action	GGGI	2016
20	EOY Report 2017 – Viet Nam Urban Green Growth Action Phase 2	GGGI	2017
21	EOY Report 2018 – Viet Nam Urban Green Growth Action Phase 2	GGGI	2018
35	Report – Building Urban Green Growth Fundamental Year – Da Lat City	GGGI	2018
36	Report – Building Urban Green Growth Fundamental Year – Tra Vinh City	GGGI	2018
37	Report – Building Urban Green Growth Fundamental Year – Yen Bai City	GGGI	2018
38	Analysis of Urban Green Growth Indicators for Viet Nam	GGGI	2018

No.	Title	Source	Year
39	Circular on Urban Green Growth Indicators and its Implementation	Viet Nam Government	2018
40	Viet Nam Urban Green Growth Action 2015 - Urban Green Growth Index Report	GGGI	2015
41	Urban Green Growth Index and International Best Practices	GGGI	2015
42	Annex 1 - List of Urban Green Growth Indicators	GGGI	2018
3.1 Ben Tre WWT			
43	EOY Report 2015 – the Project Design and Preparation Project	GGGI	2015
44	EOY Report 2016 – the Project Design and Preparation Project	GGGI	2016
45	Initial Environmental Examination - Wastewater Management for Ben Tre City Viet Nam	GGGI and Ben Tre City People's Committee (CPC)	2016
46	Feasibility Study Report – Wastewater Management System for Ben Tre City, Viet Nam	GGGI and Ben Tre City People's Committee (CPC)	2016
3.2 MSWTE			
20	EOY Report 2017 – Viet Nam Urban Green Growth Action Phase 2	GGGI	2017
21	EOY Report 2018 – Viet Nam Urban Green Growth Action Phase 2	GGGI	2018
47	National Strategy for Integrated Management of Solid Waste up to 2025 with a vision to 2050	Viet Nam Government	2009
4.1 National RE Plan			
48	EOY Report 2017 – Scaling up Biomass Waste to Energy	GGGI	2017
49	EOY Report 2018 – Scaling up Biomass Waste to Energy	GGGI	2018
50	Decision on the Approving the Viet Nam's Renewable Energy Development Strategy up to 2030 with an outlook to 2050	Viet Nam Government	2015
51	GGGI policy input into the National Development Plan for RE Analysis and recommendations for an implementation roadmap	GGGI	2018
52	National Plan on Development of Renewable Energy	Viet Nam Government	2018
53	National Plan on Development of RE Resolution #55 on National Energy Development Strategy up to 2030 with an outlook to 2045	Viet Nam Government	2020
5.1 Rooftop Solar			
54	Revised National Power Development Masterplan for 2011-2020 (PDP7)	Viet Nam Government	2016
55	Investment Teaser – Solar Finance Facility	GGGI	2019
56	Legal Assessment Report – Regarding implementation of leasing finance facility in the distributed solar in the industrial parks in Viet Nam	VILAF	2018
57	PIN 2019 – Viet Nam Solar Rooftop Leasing Finance Facility Project	GGGI	2019
6.1 Provincial Biomass Plan			
48	EOY Report 2017 – Scaling up Biomass Waste to Energy	GGGI	2017
49	EOY Report 2018 – Scaling up Biomass Waste to Energy	GGGI	2018
50	Decision on the Approving the Viet Nam's Renewable Energy Development Strategy up to 2030 with an outlook to 2050	Viet Nam Government	2015
54	Revised National Power Development Masterplan for 2011-2020 (PDP7)	Viet Nam Government	2016
58	Soc Trang Provincial Biomass Planning	GGGI	2018

No.	Title	Source	Year
6.2 Biomass FIT			
48	EOY Report 2017 – Scaling up Biomass Waste to Energy	GGGI	2017
49	EOY Report 2018 – Scaling up Biomass Waste to Energy	GGGI	2018
59	Insight Brief – Sweetening the Deal for Biomass Energy in Viet Nam’s Sugar Industry	GGGI	2018
60	Decision on Support Mechanisms for the Development of Biomass Power Projects in Viet Nam	Viet Nam Government	2014
6.3 Biomass WTE			
48	EOY Report 2017 – Scaling up Biomass Waste to Energy	GGGI	2017
49	EOY Report 2018 – Scaling up Biomass Waste to Energy	GGGI	2018
50	Decision on the Approving the Viet Nam’s Renewable Energy Development Strategy up to 2030 with an outlook to 2050	Viet Nam Government	2016
54	Revised National Power Development Masterplan for 2011-2020 (PDP7)	Viet Nam Government	2017
61	Pre-feasibility Study for Bagasse and Alternative Biomass Combined Heat and Power (CHP) Projects at Phung Hiep Sugar Mill, Hau Giang Province	GIZ and GGGI	2017
62	Pre-feasibility Study for Bagasse and Alternative Biomass Combined Heat and Power (CHP) Projects at Vi Thanh Sugar Mill, Hau Giang Province	GIZ and GGGI	2018
63	Pre-feasibility Study for Bagasse and Alternative Biomass Combined Heat and Power (CHP) Projects at Dak Lak Sugar Mill, Dak Lak Province	GIZ and GGGI	2018
64	Pre-feasibility Study for Bagasse and Alternative Biomass Combined Heat and Power (CHP) Projects at LASUCO Sugar Mill, Thanh Hoa Province	GIZ and GGGI	2018
65	Pre-feasibility Study for Bagasse and Alternative Biomass Combined Heat and Power (CHP) Projects at NASUCO Sugar Mill, Nghe An Province	GIZ and GGGI	2015