

Seventh Meeting of the Management and Program Sub-Committee
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Investment and Policy Solutions: Status of portfolio including policy projects

1. Following the GGGI Council decision on 18 November 2014 in Songdo, ROK ([Link](#)) to organize the work program towards implementation by developing bankable projects and helping countries access finance, this note provides a brief update of the portfolio and further lessons learnt since the 2017 MPSC meeting and observations noted therein at the Tenth Session of the Council on October 19, 2017 in Addis Ababa, Ethiopia.
2. A robust portfolio of “investment” and “policy” projects is developing at GGGI following the establishment of thematic units within GGGI whose mandate is to provide technical advice and steer GGGI work in the four thematic areas, and the further deepening of the green investment services team.
3. In 2017, a total of USD 524.6 million was mobilized through a combination of small (solar) projects and large infrastructure projects. Several national finance vehicles were “operationalized”, that is, their structures agreed by Government, seed money committed and, in some cases, funds registered and bank accounts opened. The next steps are to raise financing for these vehicles. Experience with private financing was small – through two small projects only, but further work in 2018 is expected to increase this exposure. Some projects are delayed, each with unique reasons. Some however, have had to be restructured and are now back on track (refer to Annex 1, table 2). Two projects were canceled in 2017 which were reported in the 10th Meeting of the Council in October 2017, Addis Ababa, Ethiopia.
4. The portfolio in 2018 is a combination of larger projects, more sophisticated instruments and greater country coverage. In Mexico, following the adoption of a green growth policy in the state of Sonora, a green bond is being contemplated. In Jordan, GGGI is working with the municipality of Amman to provide advice for adopting an electric vehicles transportation program. In Myanmar, GGGI is in discussions to develop a commercially feasible business model for soil restoration and the protection of mangroves. In Vietnam, GGGI is working to transform the sugar mills industry by incentivizing a shift towards greater efficiency and fuel reuse. A more elaborate table of projects is provided in Annex 1, table 1 along with Annex 2 presenting further details of active project for 2018.
5. New project opportunities have also arisen as a result of sectoral engagements in countries. For example, in Cambodia and Laos, GGGI is focused on delivering policy support and developing investment opportunities in wastewater and sanitation activities as the sector remains unsustainable due to low tariffs and non-recovery of operational costs. A national sanitation vehicle

is being developed for a project pipeline as an option for scaling up decentralized sanitation into a viable business.

6. A number of policy-based sectoral engagements has also emerged due to the establishment of the thematic units and the overall deepening of GGGI presence in countries. A few highlights are presented as below:
 - Water & Sanitation: policy support for Lao PDR, Mongolia and Cambodia.
 - In the Energy sector, providing technical assistance to the Energy Regulatory Commission of Mongolia for policy development on energy efficiency; active scoping is underway in Peru for energy efficiency possibilities in the mining sector.
 - With regard to Sustainable Landscapes, an initial concept for implementing the National Agriculture Implementation Framework for Ethiopia is underway while reviewing to food security in Middle East and Sub-Saharan Africa.
 - With Green Cities, sectoral engagements are currently to do with solid waste management in Laos and Uganda.

Observations and Lessons Learnt to date

7. **Preparing investment projects to bankability takes time.** Not all will result in investment commitment as the risks may continue to be unacceptable to financiers. The average time taken for projects in the 2017 portfolio is 18 to 24 months. From January 2018, scheduled timeline for projects to obtain investor commitment is expected to 9 to 12 months. GGGI will strive for faster delivery times for obtaining investment commitment.
8. **A one-size-fits-all approach does not work.** Due to the differing needs of Governments and the state of development of economies, different solutions must be designed. Points of origination also differ; in some instances, GGGI is presented with a *problem*, for which it then constructs a *solution*. In other instances, Governments give to GGGI a certain already-conceived project opportunity to take to investment commitment. These tend to have faster preparation and delivery times, lower risk of failure and greater Governmental commitment. In other words, there is no single pathway to bankability. And, as indicated in previous sessions of the MPSC, not all projects are bankable.
9. **Governmental commitment is not a given.** Unlike with the development of *plans* or *roadmaps* that are largely voluntary endeavors, preparing investment opportunities acceptable for financiers often entails commitment from Governments to undertake a particular regulatory change, a technology change, or a change of similar kind. Past instances have shown that obtaining such commitment is key for GGGI to both deliver on green growth as well as reduce operational risk of its portfolio. To mitigate such risk going forward, a specific “mandate letter” will be obtained, without which significant expenditure of GGGI resources will not be authorized.
10. **Being situated in the right line ministry is key.** While the current model of being situated inside ministries is helpful, GGGI staff must ideally be situated in the line ministry before embarking on a project in that sector. Unlike plans and strategies whose implementation and enforcement levels vary by country/ministry, embarking on the development of sectoral policies and/or entering into expectations to achieve bankability requires certain commitments that (often) only line ministries have the mandate to authorize.

11. **Reporting on impacts must recognize GGGI business model for investment projects.** Achieving “investor commitment” is the proxy adopted as the indicator for mobilizing finance for projects. This does not guarantee that investment for the project will be realized and the project will break ground. Once a project is prepared to bankability and even after GGGI effects the signing of a letter of intent to invest, investors are still to agree on commercial terms before executing shareholder agreements, or projects are still to be cleared by credit committees. Due to GGGI’s inherent business model, direct ability to monitor the development of projects is challenging. GGGI’s role is to prepare projects and get them financed, that is, to bring them to the point at which investor commitment has been sought. Reporting on “impacts” must therefore recognize the limits of this business model. On a case by case basis, GGGI may retain a seat as independent advisor on the Board of funds/projects thus enabling the organization to such monitoring – but this is more the exception than the rule.
12. **Early investor interest remains key to managing risk.** Although the current portfolio has a fair share of early indications of interest from investors, this criterion will be standardized across projects in the portfolio. It is a necessary criterion to reduce operational risk of the portfolio and manage expectations with counterparts in partner countries.
13. **GGGI continues to strive for an optimal model for working with multilateral development banks.** While GGGI’s comparative advantage is its ability to advise the best financing options for the projects, feeding a project into an existing financing product of a multilateral does not allow GGGI to fully utilize its skill base. It is also challenging to integrate fully in the Bank’s due diligence and internal processing systems. GGGI continues to discover models, including: co-development and co-financing – as with the AfDB in Senegal where the AfDB is both a co-developer and investor together with a sovereign wealth fund (see slide on REEF in the Annex); and co-financing - as being explored with the AfDB for a multi-year program in Rwanda where GGGI is compensated by the Bank for the management of a viable sanitation system.
14. **Additional efforts needed to engage with private companies.** The current portfolio contemplates the following engagements:
 - Vietnam fuel switch of sugar mills with a large, local market-leader sugar mill;
 - Myanmar mangroves restoration project with international project developer;
 - Senegal Renewable and Efficient Energy Fund and Thailand Industrial Energy Efficiency Program are designed to share risks with local solar companies.

Significant efforts are being made in order to empower staff with the ability to directly engagement with a single company. Working with companies sometimes involves the selection of a single company, for which GGGI follows an open and transparent process – as witnessed in Indonesia in 2017, and in a few new projects being developed in 2018. However, it is clear that staff are unfamiliar with “how” to engage with such companies as a result of which additional guidance is being given.

GGGI continues to engage with private financiers through the establishment of the Carbon and Financing Club.

15. **Regulatory and policy risk remain significant barriers to financing green growth projects.** To achieve impact at scale, it is imperative that policy changes occur in order to allow financial flows to the sector. GGGI work on policy engagements must therefore change from the current *generic* policy efforts to more *substantive* technical engagements capable of steering change in a particular sector. With the development of thematic units in 2018, more policy *instruments* – such as decrees, circulars, policies and laws - will be developed. Greater linkages between policy commitments and finance will be made wherever possible.

Internal Organizational Developments

16. **Corporate financing and policy targets are now shared.** To maximize success and further integrate the two Divisions, 2018 corporate key performance indicators (KPIs) are now shared by both IPSD and GGPI Divisions. With regard to Resource Mobilization, targets are shared between IPSD, GGPI and SPC. A standardized process of origination and preparation has been developed and is being used. This has allowed closer alignment with the strategic outcomes, Country Planning Frameworks, and the Country Business plans. It has been institutionalized through the iGrow initiative of reengineering business processes.
17. **GGGI continues to remain uniquely positioned to offer financing advice to Governments.** There is still high demand for this offering and GGGI is seen as a neutral advisor and GGGI's own lack of financing/investment capacity means its own incentives are aligned with the needs of the project and GGGI is able to advise on the most suitable financial structure and secure the right type of funds. GGGI can advise in the best interests of the project and its ability to offer such skill makes it unique amongst public organizations.

Annex 1: List of Investment Portfolio 2017-2018

The following section contains a list of investment projects achieved in 2017 and active projects as of April 2018 (Table 1). Projects that entered the 2017 pipeline but whose investment commitment is delayed are specified in Table 2.

Table 1 – List of GGGI Investment Projects

| Investment Projects | |
|--|---------------------------|
| <i>Achieved in 2017 – i.e. have achieved investor commitments ¹</i> | <i>Project Size (USD)</i> |
| 1. Indonesia: Solar PV Project in Mandalika | 17.5 M |
| 2. Indonesia: Solar PV Project in NTT Province | 15 – 32 M |
| 3. Senegal: SOGAS Waste-to-Energy Project | 1.5 M |
| 4. Vietnam: Waste Water Management for Ben Tre City | 35 M |
| 5. Fiji: Solar PV Project on Taveuni Island | 3 M |
| 6. Colombia: REDD+ Financial Mechanism | 15 M |
| 7. Rwanda: Green City Pilot Project | 60 M |
| 8. Operationalized Vanuatu National Green Energy Fund | 15M |
| 9. Restructured Cost Rica Environmental Bank Foundation | 5 M |
| 10. Operationalized Colombia Fund for Non-Conventional Renewable Energies and the Efficient Management of Energy | 25 M |
| 11. Redirected Rwanda National Environment and Climate Fund | 53 M |
| 12. Ethiopia Support for rural communities' drought resilience | 10 M |
| 13. Ethiopia GCF Irrigation Systems Support | 50 M |
| 14. Ethiopia Mekele City Water Project | 337 M |
| <i>Active Portfolio in 2018</i> | <i>Project Size (USD)</i> |
| 1. Mongolia Green Finance Corporation | 50 M |
| 2. Senegal Renewable and Efficient Energy Fund | 200 M (TBD) |
| 3. Mozambique Solar Powered Irrigation System | 10 M (TBD) |
| 4. Thailand Industrial Energy Efficiency Program | TBD |
| 5. Fund raising for Vanuatu National Green Energy Fund | 15 M |
| 6. Fund raising and project pipeline development for Rwanda FONERWA | 53 M |
| 7. Fund raising and project pipeline development for Cost Rica FUNBAM | 5 M |
| 8. Mexico Sonora Green Bond | 20 M (TBD) |
| 9. Senegal Rice Husk Gasification Project | TBD |
| 10. Vanuatu Off-grid Solar Energy Project | 30 M |
| 11. Jordan Greening Amman Bus Rapid Transit System | 30 M |
| 12. Fiji Development of 3.1 MW Solar Project in Ovalau | 13 M |
| 13. Rwanda Faecal Sludge Treatment Plants in Secondary Cities | 5 – 20 M |
| 14. Myanmar Kadonkani Coastal Soil Rehabilitation for Sustainable Landscapes | 26 M |
| 15. Colombia Palm Oil Mill Effluent to Energy | TBD |
| 16. Mongolia Green, Inclusive Infrastructure PPP Program | 10 M |
| 17. Vietnam Biomass Waste to Energy Projects | 45 – 50 M |

¹ And also contained in the DG Progress Report and the Results Report – <http://gggi.org/session/26843/> (Password: MPSC-2018-1-Seoul)

Table 2 – List of Delayed Projects from 2017

| Delayed Projects from 2017 | |
|---|--|
| Project | Reason/Note for Delay |
| 1. Mongolia Green Finance Corporation | Delayed in Q3-Q4 2017 due to inability to find a GCF accredited entity that would access GCF funding. Obstacle overcome in January 2018 and proposal submitted to the GCF in March 2018. |
| 2. Mozambique Solar Powered Irrigation System | No country presence in 2017. Country representative has been hired and project will be reinitiated. |
| 3. Thailand Industrial Energy Efficiency Program | Overly complex structure; political changes in Thailand including the passing of the King. Program is being restructured. |
| 4. Fund raising and project pipeline development for Rwanda FONERWA | FONERWA law on staffing passed only in Q2 2017; several follow-on delays. |
| 5. Vanuatu Off-grid Solar Energy Project | Further delay anticipated in 2018; GGGI currently in discussions with Government. |
| 6. Vietnam Biomass Waste to Energy Projects | Delayed in Q3-Q4 2017 due to restrictions in financing structure but now back on track. |

Annex 2: short descriptions and their traffic lights.

The following section contains short descriptions of a selection of projects in the portfolio together with a traffic light system of monitoring progress against reaching investor commitment. A green circle means that the project is on track against its anticipated timeline; amber means slight delays, and red means there are serious “issues” with the project.

To note here is that the portfolio is monitored on a monthly basis where their status changes from time to time. Projects given a red traffic light can be brought back on track (with a green sticker) with a new timeline. Projects with amber can go either way. Many projects have therefore gone through different traffic lights since the last Management and Program Sub-Committee Meeting in August 2017 as continuous reevaluation and restructuring effort is ongoing within GGGI. Therefore, the traffic light shown in this document is the project status as of 9 April 2018.

Early stage projects do not have a “light” on them, but have been listed here for information sharing purposes only. There are additional **30+ projects** under origination not all of which are included in the annex.



A snapshot of the active/under development portfolio of bankable projects, instruments, NFVs

| Type | Title | Investment Size (USD) |
|------------------------------|--|-----------------------|
| NFVs & Financial Instruments | Mongolian Green Finance Corporation | 50 million |
| | Senegal Renewable and Efficient Energy Fund | 200 million (TBD) |
| | Mozambique Solar Powered Irrigation System | 10 million |
| | Thailand Industrial Energy Efficiency Program | TBD |
| | Fund raising for Vanuatu National Green Energy Fund | 15 million |
| | Fund raising and project pipeline development for Rwanda FONERWA | 53 million |
| | Fund raising and project pipeline development for Cost Rica FUNBAM | 5 million |
| | Mexico Sonora Green Bond | 20 million (TBD) |
| Bankable Projects | Senegal Rice Husk Gasification Project | TBD |
| | Vanuatu Off-grid Solar Energy Project | 30 million (TBD) |
| | Jordan Greening Amman Bus Rapid Transit (BRT) System | 30 million |
| | Fiji Development of 3.1 MW Solar Project in Ovalau | 13 million |
| | Rwanda Faecal Sludge Treatment Plants in Secondary Cities | 5 million |
| | Myanmar Kadonkani Coastal Soil Rehabilitation for Sustainable Landscapes | 26 million |
| | Colombia Palm Oil Mill Effluent (POME) to Energy | TBD |
| | Mongolia Green, Inclusive Infrastructure PPP Program | 10 million |
| | Vietnam Biomass Waste to Energy Projects | 45-50 million (TBD) |

Mongolia Green Finance Corporation

First and only dedicated financial vehicle for climate finance in the country



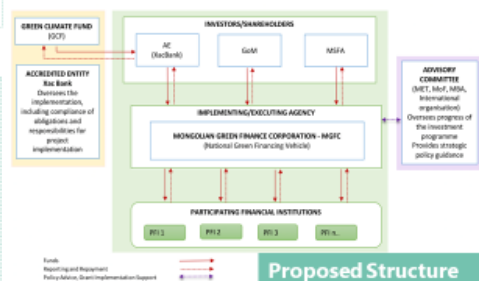
Current Gap No line of credit or facility in Mongolia for green financing; credit is too expensive 18-25% for green projects.

- Impact**
- Size of impact: 3,002,523 tCO₂e
 - Enabling new green financing in support of National Green Development Policy
 - 2000 new job created (min. 800 for women)
 - Reaching 70,548 people which will benefit from affordable and inclusive financial products
 - Capable of blending international climate finance and local capital

- Project Overview**
- GGGI is designing the Mongolia Green Finance Corporation, a national financing vehicle with vision to grow into a Green Bank
 - Immediate priority is to address the air pollution problem
 - MGCF to i) provide medium and long term credit, ii) lower credit cost to borrowers, and iii) support project pipeline development.
 - FX risk will be underpinned by the purchase of an FX swap agreement with the Bank of Mongolia.

Project Progress

- **Mar. 2018:** Funding proposals submitted to GCF, NAMA Facility
- **Feb. 2018:** Financial commitment letters obtained from MoF and 10 private banks
- **Sep. 2017:** MoU signed; MGFC Steering Committee formalized



Senegal Renewable Energy Fund

Partnership between AFDB, Senegal wealth fund (FONSIS), GGGI and the Gov't of Senegal



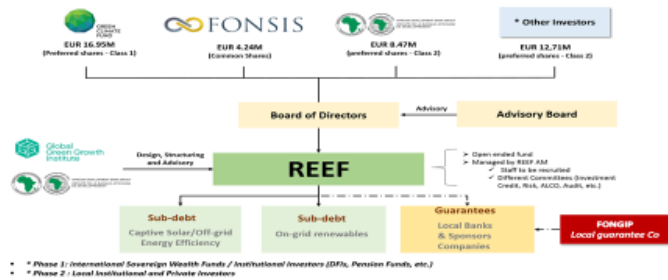
Current Gap Renewables capacity is very high; however, few projects on the ground. No access to suitable finance to meet the needs of small projects.

Project Overview

GGGI with others designing and structuring a subordinated debt fund with total capitalization of USD 200 million. The fund will provide junior debt for renewable energy (solar)
 Program will add pipeline to the market, capacity to Govt, and market development for the country.
 Fund co-financed by the AFDB and FONSIS; GGGI tasked with helping raise international funds

Impact

- Size of the impact: 300 MW of installed solar power at lower cost, reduction of spending for oil imports for electricity generation
- 65% of the total market
- Nature of the impact: NDC/SDG/contribution to country target of 20% of RE in energy mix, GHG emissions reduction of 1.5 million tCO₂e/year



Project Progress/Plan

- Q2 2018: Legal study, submission of full proposal

Mozambique Solar Irrigation Program

An structured investment program to implement solar irrigation projects



Current Gap Aid programs aimed at financing both energy access solutions and productive use of energy, while Mozambique National Energy Fund (FUNAE) project pipeline is with no project supporting rural productivity.

Program Overview

- GGGI is assisting FUNAE to deliver rapid technical assistance (RTA) with focus on renewable energy supply projects to increase agriculture productivity in rural areas.
- GGGI is leading the design and structuring of solar irrigation projects in areas affected by low electricity access and high poverty rates.
- The designed projects will be included in FUNAE's project pipeline (Carteira de Projectos de Energias Renováveis) for implementation in 2019.

Impact

- Size of investment: USD 10 million
- Reduce GHG emissions by 20-25% from BAU level by 2030.
- Impact up to 17,725 ha of cash crop plantations
- Structured projects will bring 30% (\$ 24 million) increase in annual revenue compared to traditional irrigation, and a 72% (\$ 44 million) increase from rain-fed agriculture.

Project Progress/Plan

- Mar. 2018: RTA agreed upon by key govt. stakeholder
- Apr. 2018: Site identification
- Aug. 2018: Technical and financial assessment completed
- Q4 2018: Letter of commitment and launch of support program



Thailand Industrial Energy Efficiency Program

An innovative \$10M energy efficiency program to implement national GHG targets



Current Gap • No mechanism to implement the national GHG roadmap; key hurdle is energy efficiency realization.

Program Overview

- Incentivizes energy efficiency in the auto parts sector accounting for 12% of the Thai GDP

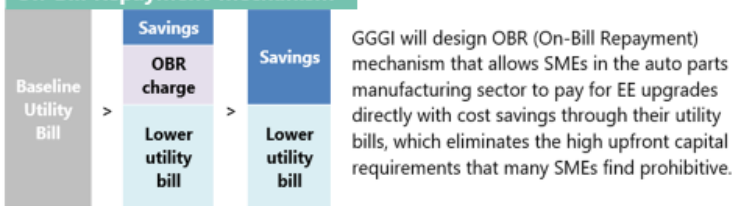
2 phases (due to complexity of program):

- Establishment phase: Design energy efficiency investment structure and deliver up to 8% of energy saving the SME sector
- Fund raise: Developing a risk-sharing facility, On-Bill Repayment or On-Bill Financing mechanism, and pipeline of bankable projects

Impact

- Size of facility: 8% of the SME segment
- Potential energy savings:
 - SME sectors: 17,236 GWh
 - GGGI potential contribution: 1,492 GWh (equivalent to 8% of the SME segment)

On-Bill Repayment mechanism



Project Progress/Plan

- Q4 2017: Energy efficiency investment structure designed
- Q1 2018: Financial facility and repayment mechanism designing
- Q4 2018: Repayment mechanism launched, Risk-sharing facility launched

National Green Energy Fund, Vanuatu

A consolidated fund for fostering rural energy access



Current Gap

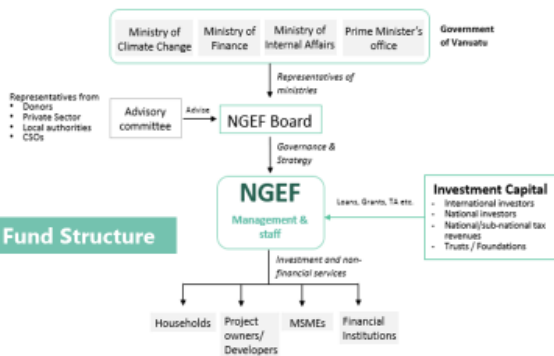
Vanuatu is highly dependent on imported fossil fuels to power its economy and the cost of energy is very high.

Impact

- Size of the fund: US \$15,000,000
- Targets 63% of total 35K households without electricity.
- Will reach 30,000 rural clients.

Project Overview

- GGGI is developing National Green Energy Fund to push forward the nation's ambitious target of 100% electricity access to households and improvement of energy efficiency by 2030.
- \$370K readiness proposal has been accepted by GCF for National Green Energy Fund development.



Project Progress/Plan

- Q3 2018: Legal registration of NGEF
- Q2 2018: Secure external funding
- Q3-4 2017: NGEF investor forum
- Q2 2017: fund unit setup, initial fund transfer

FONERWA, Rwanda

A dedicated vehicle for financing adaptation and mitigation



Current Gap Current capital of FONERWA will run out soon; current structure of FONERWA unsuitable for scaling and efficiency.

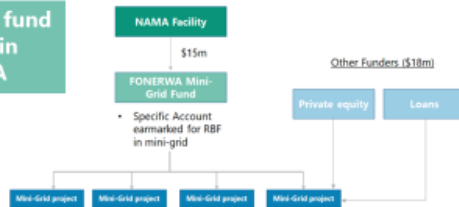
Project Overview

- Designing of a funding facility for Rwanda's already operational national green fund (FONERWA) and raising \$53m for this facility.
- GGGI is transforming this vehicle from grant provider to innovative grant/concessional loan facility for higher impact

Impact

- GHG emission with minimum 200,000 with electricity access
- 90,000 green jobs to be created
- Protected 13,000 ha from erosion, 63,000 people from climate change impacts

Mini-grid fund structure in FONERWA



Project Progress/Plan

- Q1 2018: Fund design, Funding application
- Q2-Q4 2018: Detailed preparation and funding proposal submission
- Q4 2018 – Q1 2019: Approval of funding by NAMA & start of implementation

FUNBAM, Costa Rica

A dedicated vehicle for financing sustainable ecosystems



Current Gap Key challenge is to attract capital into the 'ecosystems sector' to allow achievement of national commitments and targets.

Project Overview

- GGGI tasked with redesigning and scaling up FUNBAM, finding new money and making it operational
- Vehicle will become mechanism for implementing NDC
- Projects are pre-determined for further structuring of the fund
 - Forest Plantation Usage Program
 - Sustainable Timber Management Program
 - Sustainable Cocoa Development Program (TBC)
 - Blue Carbon (TBC)



Project Progress/Plan

- Q2 2017: Board approval of FUNBAM 2.0 Vision Proposal / Identified long list of potential projects in agroforestry, timber sector for FUNBAM
- Q3 2017: Shortlisting projects, determining viability, size of capital, risk, partnerships, governance
- Q4 2017 – Q4 2018: Project structuring for FUNBAM / Start implementing selected project(s) with the mobilized project capital

Mexico - Green Bond Issuance by Sonora State (Very Early Stage)

A sound instrument for enhancing financing for green and sustainable development



| | |
|------------------------------|--|
| Current Gap | While mechanisms already exist for bond credit ratings, environmental criteria investors currently have just few tools to ensure that their investments are making a significant impact. |
| Program Overview | <ul style="list-style-type: none"> GGGI will assist State of Sonora in development of Green Bond Framework which will focus on four components: <ul style="list-style-type: none"> Use of Proceeds Process for Project Evaluation and Selection (define eligible green projects) Management of Proceeds Reporting GGGI will also support capacity building on green bonds issuance process and shortlisting of eligible green projects. |
| Project Progress/Plan | <ul style="list-style-type: none"> Mar. - May 2018: Early engagement meeting and capacity building workshops Jun. 2018: Green Bond Framework Submission Jul. 2018: Shortlisting of eligible projects Q4 2018: Letter of commitment from MoF/Treasury |
| Impact | <ul style="list-style-type: none"> Size of investment: USD 20 million (TBD) Contribute to entire 6 strategic outcomes of GGGI and 4 thematic areas. |



Senegal Rice Husk Waste to Energy Program



| | |
|------------------------------|---|
| Current Gap | Rice mills have to pay high electricity costs that with negative impact on their productivity and competitiveness. Waste resulting from rice processing is disposed in unorganized manner |
| Project Overview | <p>Design and structure a captive consumption waste-to-energy program in the rice sector in Senegal.</p> <p>With the Government's rice self-sufficiency program, the rice husk resources are expected to triple.</p> <p>Program aims to reduce significantly the dependency of rice mills on high electricity costs from unreliable grid and contribute to increase production and competitiveness.</p> |
| Impact | <ul style="list-style-type: none"> Estimated recoverable energy is 26 GWhe Contribution to country National Program for Rice self-sufficiency through increased productivity. NDC/SDG/contribution to country target of 20% of RE in energy mix, GHG emissions reduction of 16,000 tCO₂e/year |
| Project Progress/Plan | <ul style="list-style-type: none"> Q2/3 2017: Stakeholders identification and engagement Q1 2018: Stakeholder mapping with Gov't Q2 2018: Prepare business case Q3 2018: Organization of investor forum for identified projects |



Vanuatu Solar Project on 30+ Project Sites



Current Gap National Energy Road Map 2016-2030 sets a target of 100% rural electrification sourced 100% from renewable energy by 2030. At present, around 9% of rural households and 54% of rural public institutions outside of the concession areas are electrified.

Project Overview

- GGGI has partnered with the government and UNDP to develop of a comprehensive renewable energy-based rural electrification masterplan, standardized set of technical specifications for renewable energy (RE) off-grid systems, installation of solar PV systems in at least 30 sites, and a sustainable mechanism for operation & maintenance and payment scheme for off-grid solar.
- The project will take into account the existing rural electrification initiatives in Vanuatu, utilize established processes and standard where available and fill gaps, thus enabling the achievement of 100% rural electrification in a uniform approach across the country.

Impact

- Size of investment: USD 30 million
- Contribute to the National target and NDC by:
 - Strengthening local capacity for managing and regulating the off-grid electricity sector;
 - Creating conducive environment for private sector participation in rural electrification;
 - Reducing dependence on diesel for electricity generation.

Project Progress/Plan

- Q1 2018: Rural Electrification Masterplan
- Q2 2018: Concept Note submission to GCF
- Q3 2018: Market assessment & feasibility studies, Technical specification, Mechanism for O&M, and payment scheme
- Q4 2018: GCF funding proposal development and submission

Jordan – Greening Amman Bus Rapid Transit System



Current Gap The Bus Rapid Transit System project is currently planned to be implemented with diesel-fueled buses. Lower emissions "EURO 5" diesel standard is currently not available in the country. All petroleum products are imported. No anticipated mitigation measures.

Project Overview

- The objective of the project is to green the upcoming Bus Rapid Transit system in Amman, Jordan, by 1) switching from diesel powered vehicles - which is the existing choice of vehicle fleet - to electric buses and 2) by installing an 8MW solar plant to supply clean, renewable electricity to the BRT.
- **Risks:**
 - Technology Risk: GGGI will have to mitigate perceived technology risk through knowledge sharing workshops aiming media, citizens and government officials and ideally through organizing a field trip for key influencers and decision-makers to cities which successfully implemented the technology.
 - **Political Risk:** GGGI must establish partnerships with stakeholders (local and international NGOs, citizen groups, climate change influencers, technology suppliers and development agencies, etc.) to create an advocacy group for BRT system.

Impact

- Size of investment: USD 20-50 Million
- Contribute to the Jordan NDC by:
 - GHG reduction: 14,000 tCO₂e annually: Reduction¹ of PM2.5 emissions by 500 kg/y (social cost 32,600 USD/t), and NOx emissions by 64 tons/yr (social cost 254 USD/t).
 - Tackling the transport sector with 27% of total emissions, the second largest source of GHG in Jordan.

Project Progress/Plan

- Q1 2018: Stakeholder mapping/co-financier identification
- Q2 2018: Gov't mandate secured/ Designing business case
- Q3 2018: Presentation of final options / media campaign
- Q4 2018: Cleaner vehicles specifications included in the BRT tender

Fiji Solar Project on Ovalau Island



Current Gap The Green Growth Framework for Fiji aims to reach 99% share of renewable electricity generation by 2030 while the island is highly dependent on diesel for electricity production

Project Overview

- GGGI is working with Fiji's Ministry of Economy and the Fiji Electricity Authority (FEA) to develop approximately 4.7 MW solar PV and an energy storage capacity of 5.7MWh/day on Ovalau Island.
- The project aims to replace diesel-based electricity generation with solar PV while delivering electricity to 98% of households.
- GGGI is developing small-scale solar PV projects, which will provide a blueprint for the wider Pacific Islands context.

Project Progress/Plan

- Q1 2017: GGGI pre-feasibility
- Q1-3 2018: Full Feasibility preparation
- Q4: Project funding secured

Impact

Contribute to Fiji's NDC by:

- reducing dependence on diesel for electricity generation and bring positive impact on Fiji's balance of payments imported diesel cost;
- increasing renewable electricity generation to 50% in the island
- demonstrating a successful island solution for renewable energy projects to provide energy access

Potential project sites



Rwanda Faecal treatment in Green Secondary Cities



Current Gap The faecal sludge coming from septic tanks in Kigali is dumped into the Nduba landfill which leads to severe environmental damage (ground and surface water, air, soils). The rapid expansion of the City of Kigali has had a negative impact on water in Kigali and secondary cities nearby. No sanitation systems in place.

Project Overview

- Demonstrate that faecal sludge treatment plants in four Rwandan secondary cities can be financeable.
- Targeting AfDB technical assistant of USD 3 million over 3 years period.
- Capacity to treat up to 80 m³ / day (all city's available sludge). Option to produce fuel and energy
- Partnered with WASAC and FONERWA, potentially financed by AfDB if structured well.

Impact

- Size of the impact: Treat 100% of City's available sludge
- USD 5M investment per project (up to 4 projects)
- Nature of the impact: SDG 6 (water quality) and 7 (renewable energy)

Project Progress/Plan

- Q4 2017: Identification of shortfalls to reaching bankability goal
- Q2 2018: Launch of 3 year program
- Q3 2018: Preparation of full investment proposal for 1st project
- Q4 2018: 1st project: Tender process to select private operators
- Q1 2019: 1st project: Finalization of financial structuring, Financial Close and beg. of construction

Four Targeted Cities



Myanmar: Kadonkani Coastal Soil Rehabilitation for Sustainable Landscapes (Very Early Stage)



Current Gap Kadonkani concession has been heavily de-forested over the past 30 years. About 80-85% of concession is now so called red soil (Thionic Fluvisols soil type) and practically useless for productive food production.

Project Overview

- Successful project implementation would mean the first private-public REDD+ project in Myanmar under VCS JNR and could be scaled up to over 1,000,000ha coastal area only in Myanmar.
- The outcome will be the identification of replicable least cost solutions for an increased penetration of renewable energy in rural areas to offset the use of diesel and ensure a reliable supply of electricity.

Project Site



Impact

- Design a commercially feasible model for soil rehabilitation (investment size: USD 26 million).
- Provide a green growth legitimation based on rigorous demonstration of environmental and social safeguards coordination and policy alignment with multi-sectoral parties to benefits for local stakeholders.

Project Progress/Plan

- Q1 2018: Soft on-the-ground marketing
- Q2 2018 : Mandate letter
- Q3 2018: Investment documentation
- Q4 2018: Investor Meetings



Colombia Palm Oil Mill Effluent to Energy Program (Very Early Stage)



Current Gap Colombia is the 4th global producer of palm oil. Renewable energy from Palm Oil Mill Effluent (POME) can be an efficient source of power generation with estimated potential of 340 MW, but the business model needs to be proven.



Project Overview

- The aim of the project is to enable the participation of palm oil mills, private sector investors and independent power producers in the POME to energy market.
- The outcome will be the identification of replicable least cost solutions for an increased penetration of renewable energy in rural areas to offset the use of diesel and ensure a reliable supply of electricity.

Impact

- Demonstrate viable business model POME waste to energy projects.
- Demonstrate how POME waste to energy can directly contribute in achieving the GoC's aspirational goal of reducing GHG emissions of 6.5% by 2020 and country's ambition to source 30% of its power from renewable sources.

GGGI's Added Value

- GGGI has identified Palm Oil Mill Effluent (POME) as an economically viable source of renewable energy
- GGGI will prove the technical and commercial viability of the project and arrange investment commitment.
- GGGI designing the entire program and getting it implemented.

Project Progress/Plan

- Q1 2018: Concept validated w/ MME, mills, IPPs and investors
- Q2 2018 : PO mills identified; ongoing engagement with IPPs, EPCs and investors
- Q3 2018: Pre-FS concluded; Investment proposals, investor pitch deck ready; Investor roadshow
- Q4 2018: Proven investors commitment achieved

Mongolia: Green, inclusive Infrastructure PPP Program

Current Gap

Infrastructure is not climate resilient; maintenance is costly in winters; stretched government resources means GoM cannot fund climate resilient infrastructure.

Project Overview

- GGGI tasked with innovating a (financing) mechanism for infrastructure to be climate resilient
- Implementing performance-based/availability payment type of green/energy efficient PPP model in public buildings and infrastructure, which aims to mobilize private capital and climate financing.
- Program implemented on phased-approach: i) pilot case 10 public buildings, approx. \$10 million ii) scale up phase, up to \$100 million.

GGGI's Added Value

- (i) Designing feasible green PPP models and projects for public buildings; (ii) designs a feasible financing mechanism based on pilot PPP project case; and (iii) enhances capital flows into the program
- GGGI offers the GoM integrated value-added strategic advisory services - (i) leverage limited public funds to attract additional financing through a feasible PPP scheme, risk-sharing instruments, knowledge/innovation, standard setting and policy recommendations; (ii) mainstream green growth in infrastructure PPP model and enhance quality of public services.

Impact

- **Size of the impact:** 10 building with capacity of 2,510 seats [pilot case]
- **Nature of the impact:** Increased number of education facility (SDG), heat loss and energy efficiency of public building (Mongolia's NDC, National Green Development Plan)



Project Progress/Plan

- Q3 2017: Full business case with technical output specifications completion & UB City endorsement and budget allocation in 2018-19
- Q1 2018: [Secured government appreciation letter](#)

Vietnam Biomass to Energy Project

Potential to leverage up to \$50M in private capital

Current Gap

There are 41 sugar factories in Vietnam that produce about 7.8 million tons of waste bagasse per year that is not being utilized economically.

Project Progress

- Q1-2 2018: [Mandate letter](#)
- Q2 2018: Financial design
- Q3 2018: Investor Shortlist
- Q4 2018: Project close



Project Overview

- Pre-feasibilities for currently inefficient selected Vietnam sugar mills to retrofit them with efficient biomass utilization for combined heat and power (CHP) generating up to 25MW, partly to feed to the Vietnam grid, to reduce costs and enhanced revenues.
- The project focuses on the efficient biomass fuel supply chain and mobilization of debt capital for the bioenergy power in Vietnam.

Impact

- 25MW (approx.) project pre-feasibilities financed at a cost of approx. \$50K can leverage up to \$45-50M of private finance.
- Potentially increasing the number of sugar mills that feed electricity to the grid by 29%, increasing renewable energy within VietNam, in line with gov't targets for biomass power production.