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Bridging the Green Financing Gap

May 2018

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Green financing gaps in green investments architecture

There appears to be no dearth of capital; the bottleneck is the lack of bankable projects that can meet risk-reward expectations of investors and unlock capital.

USD 83 Trillion

Assets under management (2013) - OECD institutional investors[1]

?

Private capital USD 243 Bn

Capital flow to Climate Finance in 2014[2]

USD 391 Billion

There appears to be no dearth of capital - OECD institutional investors alone have **US$ 83 trillion[1]** as assets under management. Capital advanced towards green projects in both developing and developed world, however, remains constrained - **US$ 391 billion** in 2014

National Financing Vehicles (institutions, funds, mechanisms)

Innovative Financial Instruments and Structures

Most of the national level financial institutions are severely limited in their ability to access and handle same capital

Lack of available financial structures and instruments which can meet risk-reward expectations of investors and unlock capital

USD ??? to Developing countries[3]

Country level green projects and programs

[1] OECD, 2013 - Assets under management for institutional investors – Investment funds, insurance companies, pension funds, sovereign wealth funds

[2] Source – Climate Policy Initiative

[3] World Bank estimates

Meeting investors' expectations

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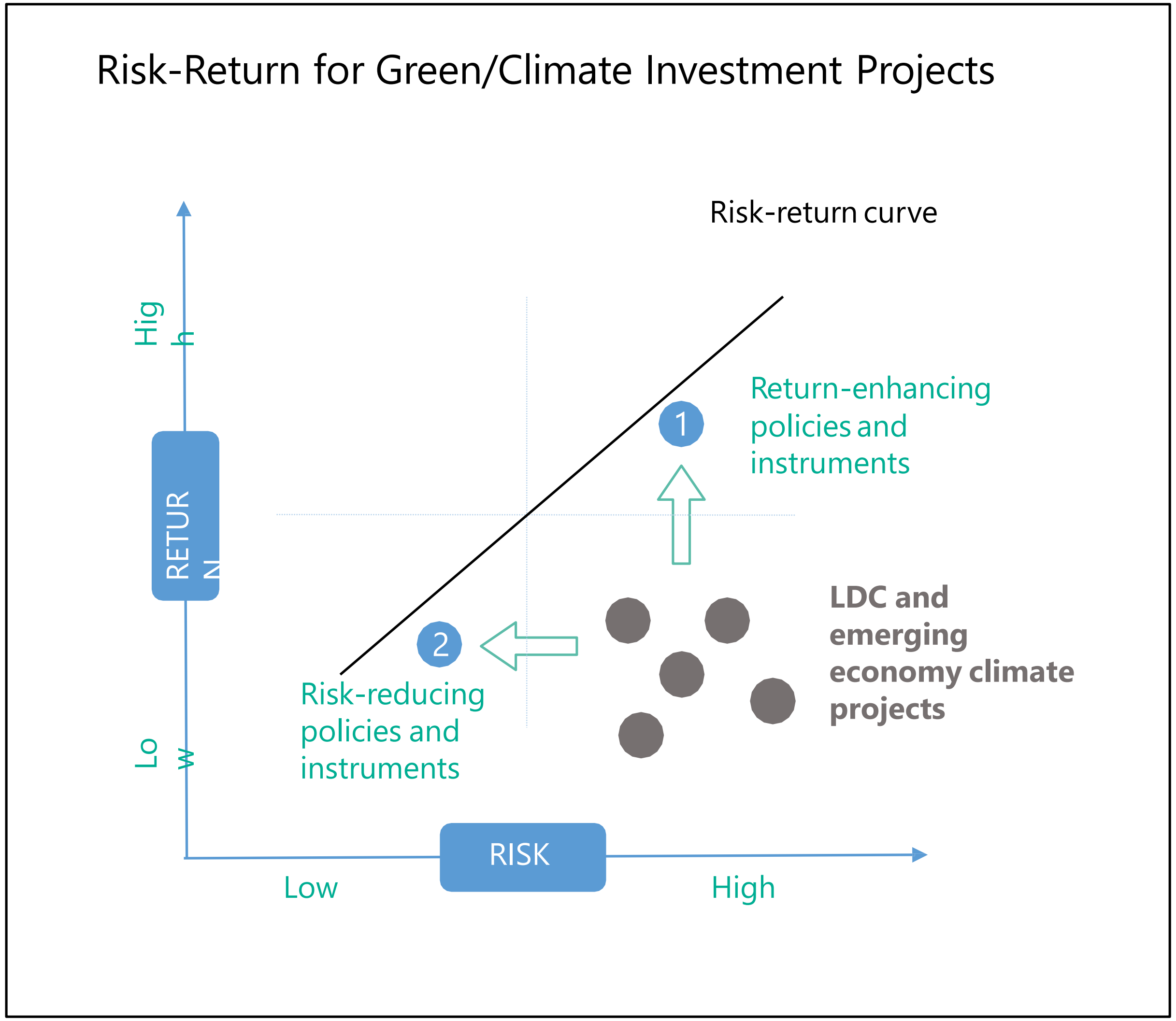

- Commercial (banks, PE firms) and institutional (investment funds, insurance companies, pension funds, sovereign wealth funds) investors perceive green climate investment projects in emerging economies **as high risk and low return**
- **High Risk** due to large upfront capital is required to fund large infrastructure and development projects; more suitable for commercial investors looking for short-term high returns
- **Low return** once the projects are operational since the projects generate stable cash flows for long time horizons; more suitable for institutional investors who look for long-term stable cash flows

The most common risks in green investments

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Building on researches*, GGGI has identified the most common risks faced by green investment projects in least developed countries and emerging economies.

Category of Risk	Common Examples
Political Risk	• Unstable political environment • National and local security concerns • Changes in national or local government support for climate projects
Regulatory Risk	• Policies that promote business-as-usual “brown” growth (e.g., fossil fuel subsidies, restrictive permitting and licensing) • Insufficient or contradictory enabling policies (e.g., feed-in-tariff, tax incentives) • Weak legal frameworks and limited enforcement of regulations • Regulatory changes that adversely impact projects • Frequent changes to regulation that create instability
Technology Risk	• Technology underperformance • Limited in-country expertise in construction of green growth projects • Limited in-country expertise in operations and maintenance of technologies • Inadequate supporting infrastructure (e.g., information and communications technology, transmission and distribution)
Credit Risk	• Counterparty creditworthiness, risk of default or non-payment • Counterparty expertise • Limited national and local experience with project management • End-user payment for public services
Capital Markets Risk	• Immature national and local financial markets • Limited market liquidity • Currency fluctuations and depreciation • High transaction costs

*UNEP 2016., Buchner et al. 2015., Frisari, Gianleo, Morgan Hervé-Mignucci, Valerio Micale, and Federico Mazza. “Risk Gaps: A Map of Risk Mitigation Instruments for Clean Investments.” Climate Policy Initiative (CPI), 2013., “Risk Mitigation Instruments in Infrastructure Gap Assessment.” World Economic Forum (WEF), 2016., Wuester, Henning, Joanne Jungmin Lee, and Aleksi Lumijarvi. “Unlocking Renewable Energy Investment: The Role of Risk Mitigation and Structured Finance.” International Renewable Energy Agency (IRENA), Abu Dhabi, United Arab Emirates, 2016.

Risks associated at each stage of project development

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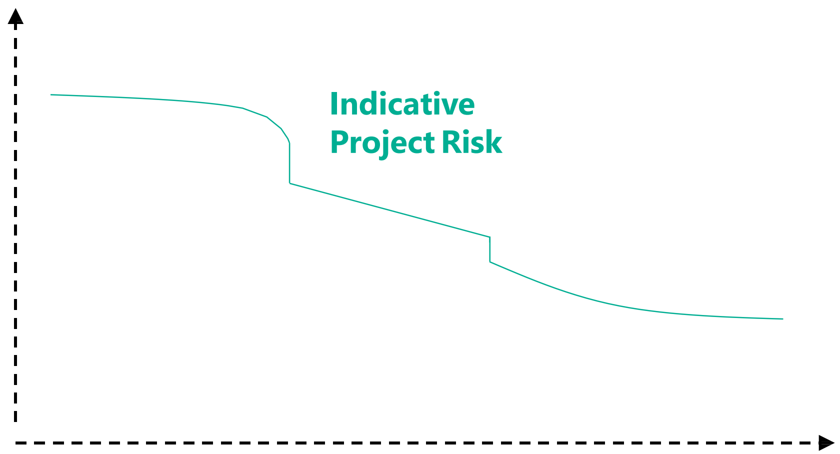


	Early stage	Bankable	Financed	Mature
Political Risk	High	Medium	Medium	Low
Regulatory Risk	High	Medium	Medium	Low
Technology Risk	Medium	Medium	Medium	Low
Credit Risk	High	High	Medium	Low
Capital market Risk	Medium	High	Medium	Medium

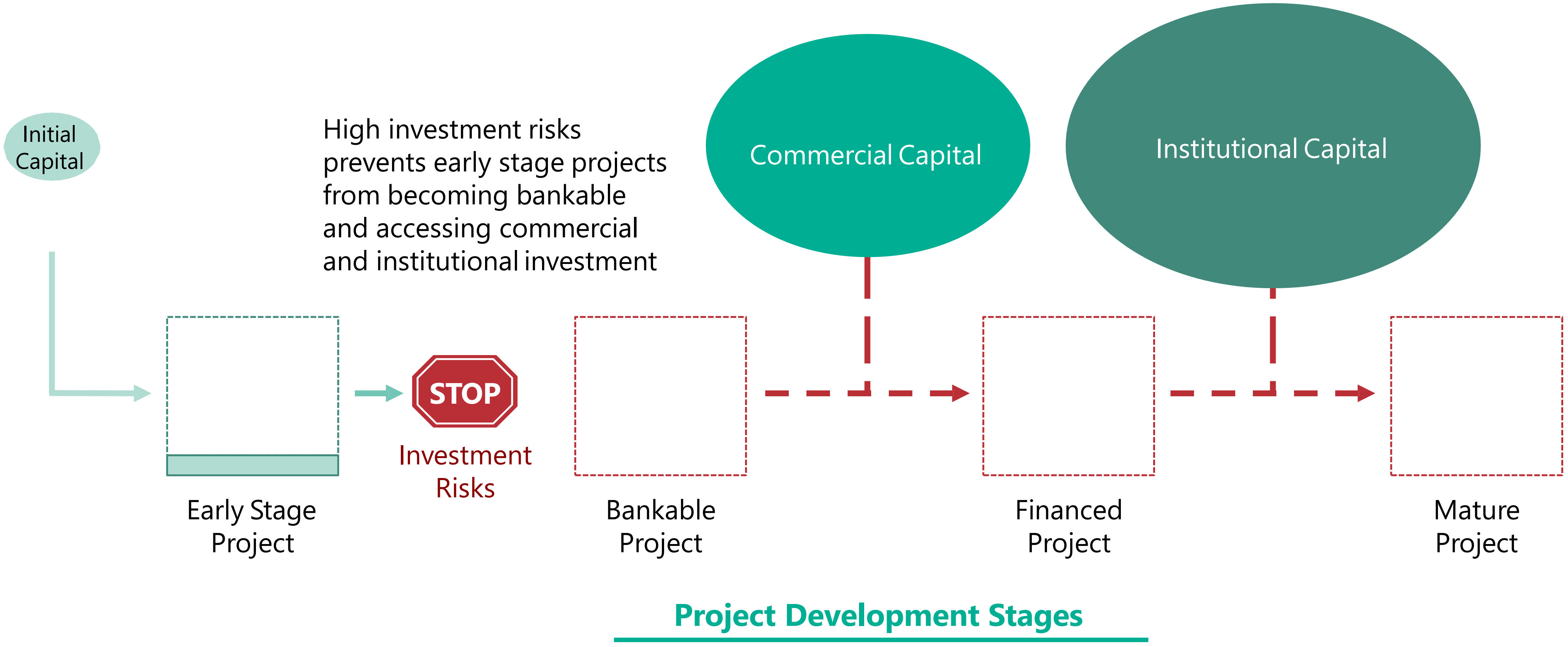
LEGEND

- High
- Medium
- Low

- As a project progresses, the associated risks and overall risk profile of the project changes
- Credit risks with counterparties at the highest level at the early stage of the project and it being reduced as project develops further
- Technology risk for example is medium throughout the first three stages due to uncertainty of the project performance, drops to low once the project matures

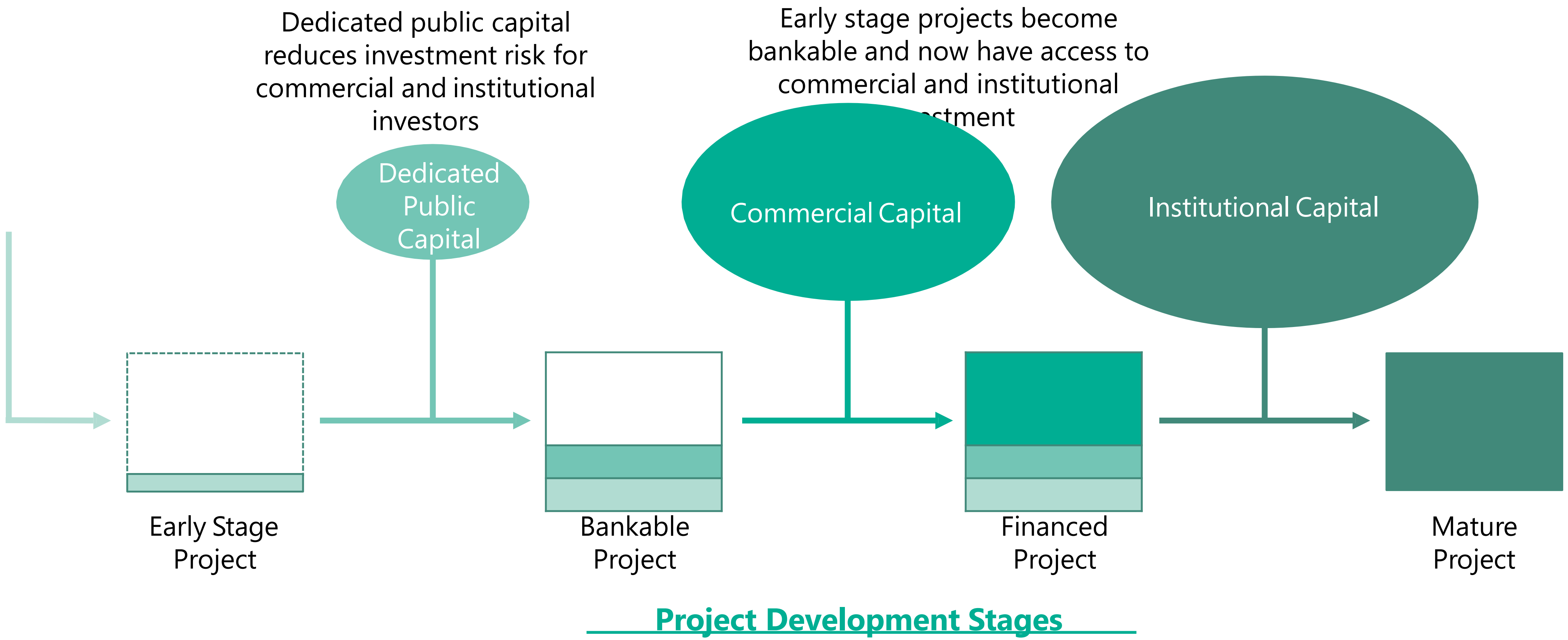
Investment risks in the project development process

At Early Stage, the projects encounter difficulty accessing the large pool of commercial capital because the high investment risks involved prevent projects from being bankable.



Risk Mitigation - Innovative financial mechanisms via instruments

Innovative financial mechanisms using financial instruments (including dedicated public capital) can provide risk mitigation that enables commercial capital to finance a bankable project by identifying and addressing risks at early stage.



Risk Mitigation – Need for innovation in financial instruments

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The more risks mitigated and the more capital that is made available, the more innovative is the structure.

Main risks for green projects

Technology Risk	Performance and replicability of technology, given the context and conditions in any country
Credit Risk	Counterparty risk - performance, financial strength and historical reputation/actions.
Capital Markets Risk	Under-developed markets with an absence of financial institutions and instruments to provide liquidity, support and transactions
Political and Policy Risk	Political decisions, conditions, events and changes in regulation, laws in a country

A combination of instruments and the way in which they are used to mitigate the relevant risks is what constitutes innovation.

Instruments	+	Application	=	Innovation
Guarantee Grant Insurance Equity Loans		• Financial instruments design • Financial structures design		Risk mitigation and blended returns for investors

GGGI designs innovative financial instruments to reduce risk and enable capital flows into the sector

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MONGOLIA

Public Private Partnerships (PPPs) for green public infrastructure in Mongolia

Project rationale

Increasing investment needs in public infrastructure in Mongolia / Limited public funds

National Green Development Plan (2014) requires increased investment in clean technology by introducing diverse financing instruments for a green economy

Shortage of kindergarten and school buildings & outdated facilities: Government investment plan to construct +1,200 educational facilities -> need for private capital and "GREEN" design

Develop a **PPP model** as an effective way of **"fast tracking" the delivery of high priority public facilities/services in a "greener manner."**

Project scope

Greening PPP Educational Buildings in Mongolia

Technical Guideline Development

- Reference Model Selection
- Framework Development
- Simulation and Validation

Technical Guideline

PPP Model

Development of locally feasible PPP model

- Global practices of educational PPP model
- Legal, policy and regulatory framework

- Determining the balance between environment and economic impact
- Providing some details on the technical guideline for private participation in infrastructure considered as PPP projects

Technical Guideline based on PPP Strategy

- Applying feasible PPP model in procuring and operating education facilities
- Analyzing payback period for the green technology in educational buildings

Propose a Locally Customized GREEN PPP MODEL for Educational Buildings with Technical Output Specifications

Expected results

Timely provision of education building PPPs

The pilot project is planned to be financed and constructed through performance based PPP contractual arrangement led by the UB city

Reduced GHG emission

The pilot project of 10 education buildings construction is expected to achieve 54% of GHG reduction annually compared to Business-as-Usual (BaU) by implementing energy efficiency measures

Improved health and learning environment of students

Learning environment will be improved for students and teachers with having warm and safe education facilities. CBA resulted in 13% higher value for money in favor of the PPP model.

Minimized immediate fiscal impact by using private sector financing

The pilot project will lead to the feasible social infrastructure project delivery model for UB city while minimizing immediate fiscal impact and short-term budget allocation

GGGI designs national financing vehicles to support countries to accept and effectively use climate finance towards projects and programs

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VANUATU

Design and operationalization of the National Green Energy Fund (NGEF) in Vanuatu

Ministry of Climate Change

- Leading the convening within GoV to establish operational NGEF.
- Nominated GGGI as Delivery Partner for GCF readiness support

NATIONAL GREEN ENERGY FUND

Green Climate Fund

- Helping fund NGEF setup activities under the GCF Readiness support to the GoV.

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- Technical assistance to lead design and financial structuring of the facility.
- Conducting market assessment & legal analysis.

Target size	**USD 50 million**
Target investment markets	▪ **Access to electricity** for 3,000 households and ▪ **Energy efficiency** projects for 1500 households and 500 MSMEs ▪ **RE for productive uses** in 25-50 rural sites
Target financial instruments	▪ **Catalytic grants** for credit enhancement, interest rate subsidies, etc. ▪ **Technical Assistance**

The NGEF will be developed in a phased approach to ensure strong fiduciary and management structures

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Concept Development

- Council of Ministers, Government of Vanuatu (GoV) decide to establish NGEF
- GGGI leads concept development for NGEF
- Preliminary market research activities

April 2016

Design of fund

- GGGI-GCF funded designing under readiness support to government
- Comprehensive market research
- Legal and regulatory review
- Establishing national government buy-in

Januar y 2017

NGEF unit under Department of Energy

- Commencement of NGEF operations as a unit funded by Department of Energy, GoV
- Managed by national government task force
- Feasibility /market studies for detailed product design
- Development of business plan and operation Manual

September 2017

Operational NGEF as an independent entity

- Fully independent public entity
- External fund raising, incl. GCF
- Start of investment operations to meet NERM objectives
- Pilot program/project as per scope of investments
- Initial focus on grants and TA

Q3-4 2018*

**Planned*

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Thank you