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Developing a Guarantee Instrument to Catalyze Renewable Energy Investments in Indonesia

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Background

- This analysis is part of CPI's research program, in which CPI and PT Sarana Multi Infrastruktur (Persero) explore the potential of developing a green investment bank model in Indonesia.
- The basic role of a green bank is to identify barriers to investment in green infrastructure and develop solutions to address these barriers. Green banks are typically capitalized with public money and engage in multiple activities, including concessional lending as well as risk mitigation instruments.
- The overall objective of the program is to help development financial institutions, policymakers, and donors to understand the opportunities and challenges of applying the green investment bank model in the country.
- **This analysis specifically looks at the potential of developing a guarantee instrument to help catalyze renewable energy investments in Indonesia.**

Summary Findings (1/3)

- A guarantee instrument is one of the many potential de-risking instruments to help accelerate renewable energy development in Indonesia.
- A guarantee is not the only solution to address a range of investment barriers in renewable energy projects in Indonesia.
- However, there are opportunities where a guarantee can (partially) address investment barriers:
 - (i) Address security gap — may be needed in small projects because of the tendency to attract small developers with insufficient balance sheet.
 - (ii) Improve risk-return profile of a renewable energy project — in a situation where a guarantor assigns a lower risk profile to a project than the potential lenders (and where the cost of guarantee is lower than the reduction of cost of debt).
 - (iii) Increase access to long-term funding from local banks resulting from improved risk profile.

Summary Findings (2/3)

- There are ten organizations providing 13 guarantee products covering the Indonesian market, yet none provide specific coverage for the renewable energy sector. As resources are limited for deploying guarantees, they become less accessible due to competition from other sectors (not only in Indonesia but also in other countries).
- As the perception of political risk and public sector performance in Indonesia has improved in recent years, the demand for guarantee instruments to cover these risks have gradually subsided among financial institutions—in addition, the existence of IIGF has also (partially) covered these risks.
- The development of a credit guarantee for renewable energy in Indonesia offers the most potential to help rejuvenate the market while also catalyzing private investments.
- The development of a credit guarantee by a local financial institution can also help increase the guarantee's visibility and accessibility to local stakeholders.

Summary Findings (3/3)

- However, there are potential challenges to effectively implement a guarantee instrument in Indonesia, namely:
 - I. competition with shareholder/corporate guarantee, which tends to have a lower cost;
 - II. “first demand” feature often required by financial institutions;
 - III. limited involvement in recovery proceedings in case of default; and
 - IV. limited awareness about a guarantee instrument among financial institutions.

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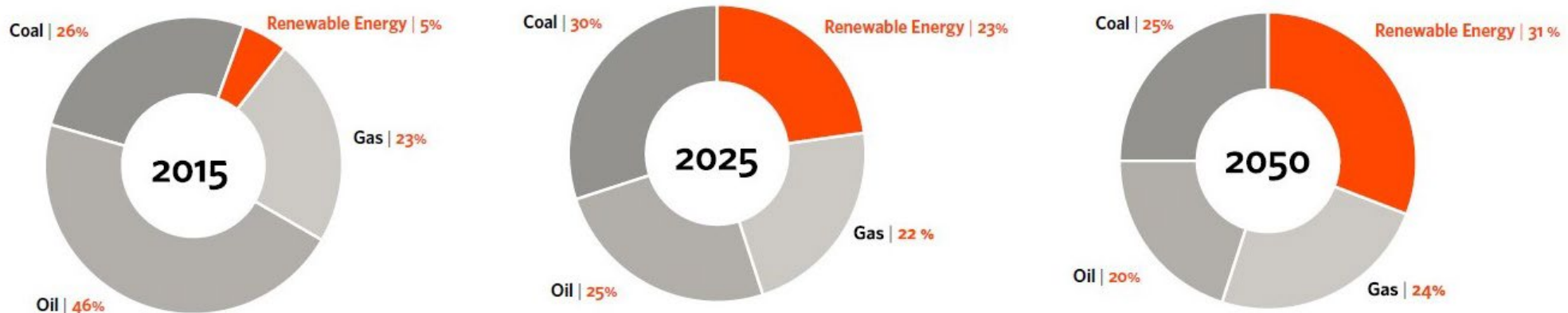
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Introduction

Mobilizing private capital is a requisite for Indonesia to meet its clean energy mix targets from the currently installed 5% to 23% by 2025

Renewable Energy Mix (in MW)



Source: CPI study, 2018

- Investment needs to meet energy targets are estimated to reach USD 125 billion by 2025.
- Private sector needs to play a key role for Indonesia to achieve its renewable energy targets, yet private investments are far from sufficient.
- Public actors also need to play a larger role to attract private investments, by de-risking investment opportunities more effectively.

Types of de-risking instruments that can help accelerate renewable energy

Instrument Type	Instrument Name
Contracts	Engineering, Procurement and Construction Contract (EPC); Operation & Maintenance Contract (O&M)
	Emissions Reduction Purchase Agreement (ERPA)
	Foreign Exchange Swaps / Futures
	Power Purchase Agreement (PPA)
	Decommissioning Contract
Credit Enhancement	First Loss Insurance
	Interest Rate Subs
	Letter of Credit
	Credit Guarantee
	Securitization
Insurance	Private Insurance (general)
	Delays in Start-up (DSU)
	Political Risk Guarantee
	Public Sector Performance Risk Guarantee

Instrument Type	Instrument Name
Revenue Support Policy	Feed-in-Tariffs (FiT) / Feed-in-Premia (FiP)
	Tradable permits
	Tax Credits / Tax Equity
	Fossil fuel subsidy policy
Direct Investment	Concessional Loans Funding
	Dedicated Private Equity Funds
	Equity-investments of Development Banks
	International Climate Funds
Political / Institutional Support	Public-Private Partnership
	Capacity Building / Tech Assistance
	Database / Information tracking tools
	Quality Standard

Focus of this Analysis

PT SMI plays a critical role in developing innovative financial instruments to help de-risk renewable energy projects

- SMI is an institution with both profit and development objectives.
- Solid credit rating and low leverage ratio.
 - AAA (local rating) / BBB (international rating)
 - Debt split: 40%
- Strategically positioned to catalyse investments in clean energy projects in Indonesia.
 - Ability to raise fund at low cost
 - Ability to develop innovative products
 - Has a long-term view on investments
 - Access to funding from international partners (MDB, DFIs)

Guarantee instrument can help de-risk renewable energy projects, but is there an opportunity for developing one?

We seek to answer the following questions through our analysis:

1. What are the key barriers and risks to private investment in renewable energy projects in Indonesia?
2. What is the current landscape of guarantee instruments in Indonesia? Who provides what?
3. Where (at which conditions) do opportunities exist for SMI's guarantee instrument to overcome key investment barriers (without duplicating other providers)?
4. How can we design and structure guarantee instruments?

Barriers & Perceived Risks

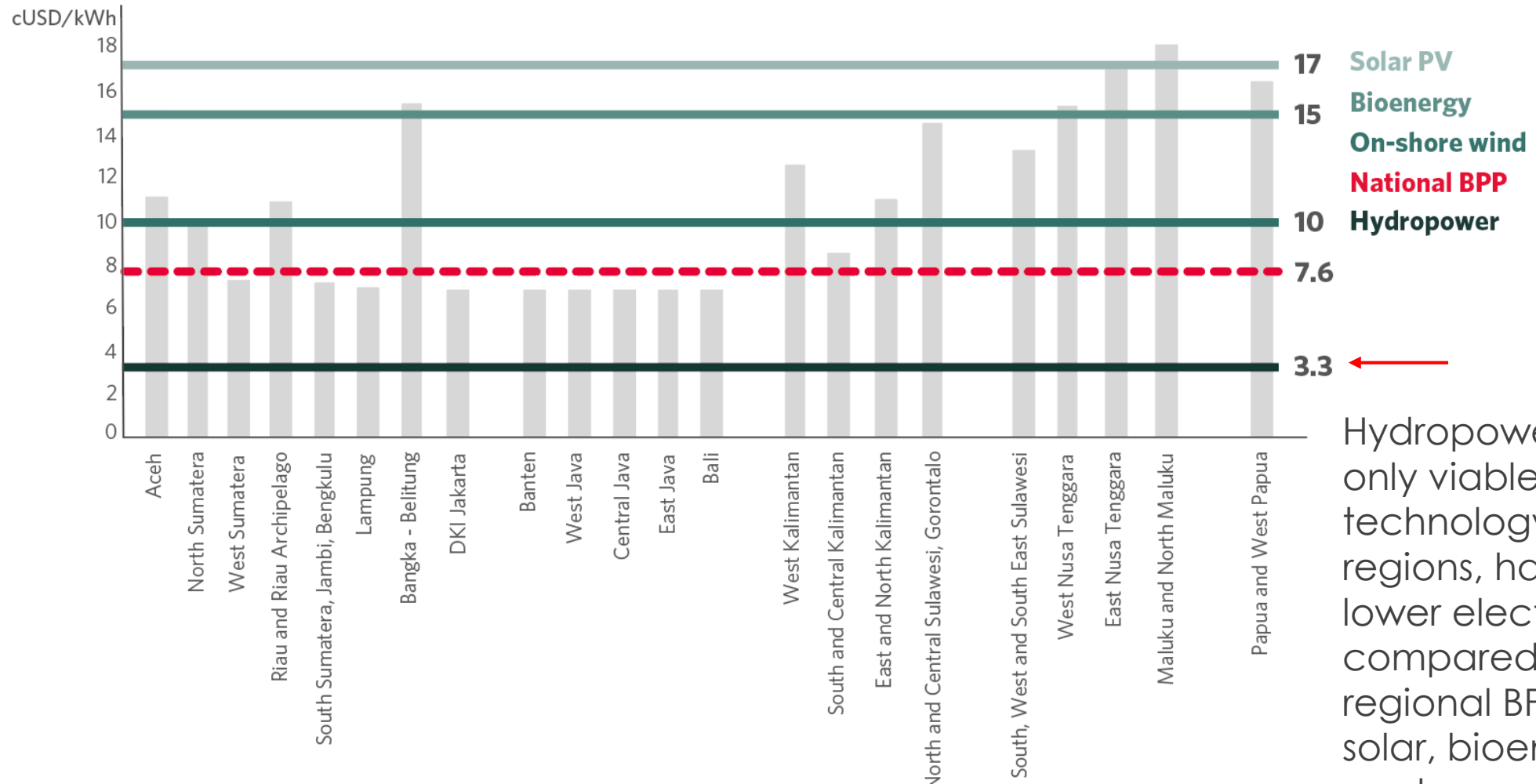
Understanding the key challenges and risks to private investment in renewable energy projects in Indonesia

A host of barriers and ‘perceived risks’ are preventing private sector investments

Key Barriers	Risk Level			
Insufficient risk-return profile	Low	Med-Low	Med-High	High
High capital requirement	Low	Med-Low	Med-High	High
Limited investment vehicle/ product and/or risk mitigation instruments	Low	Med-Low	Med-High	High
Insufficient project size	Low	Med-Low	Med-High	High
Limited appetite from local financial institutions	Low	Med-Low	Med-High	High

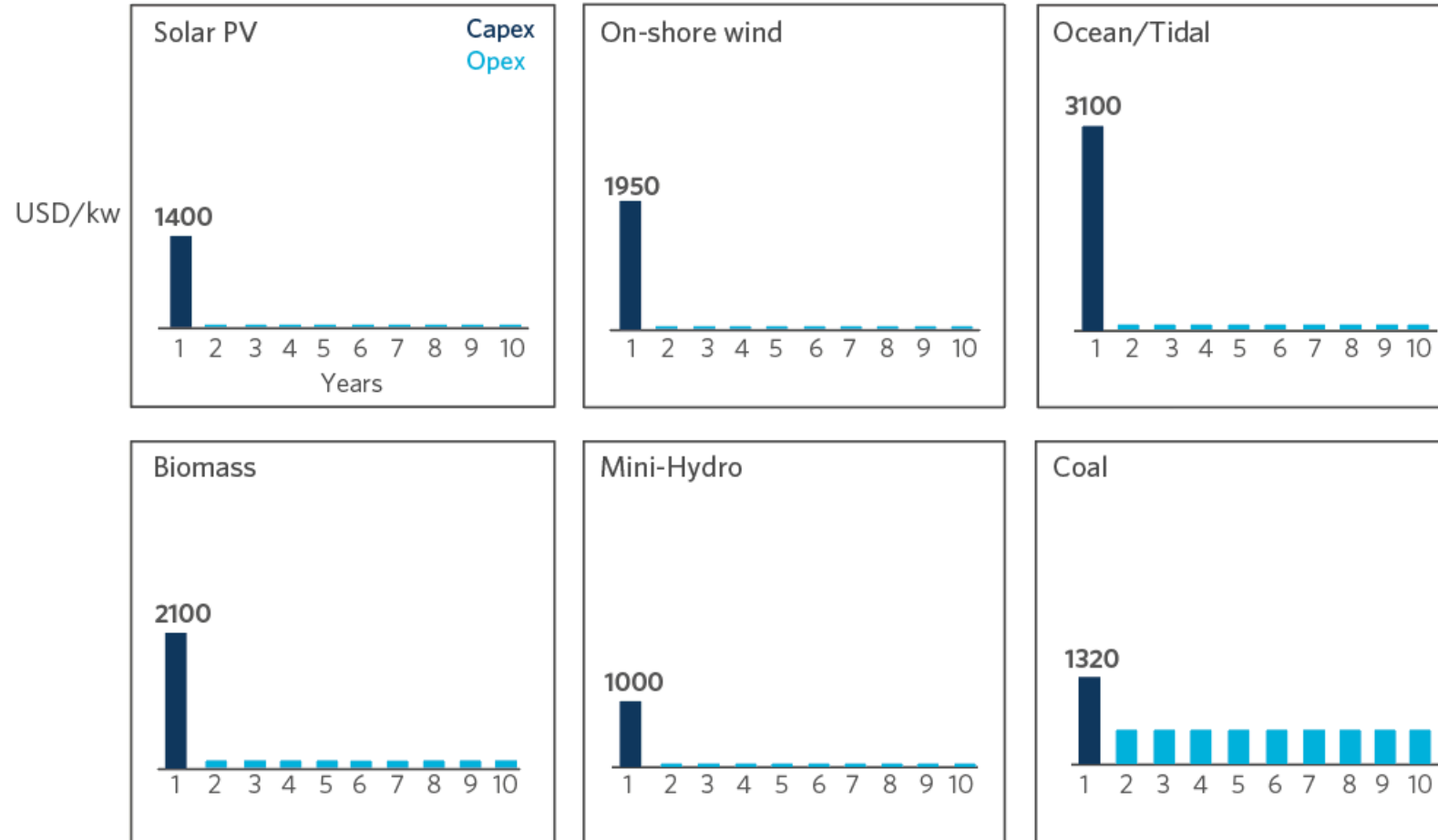
Unfavourable policy is skewing the risk-return profile of renewable energy projects in most regions

RE type	Purchasing Method	Tariff	
		Regional BPP > National BPP	Regional BPP < National BPP
Solar PV	Direct selection based on capacity quota	Max. 85% x Regional BPP	B2B negotiations
Wind			
Biomass	Direct selection	Regional BPP	In regions of Sumatra, Java, and Bali, or other systems where regional BPP ≤ National BPP, the tariff shall be based on B2B negotiations. In other regions, the tariff shall be the regional BPP.
Biogas			
Ocean Energy			
Hydro-power			
Geothermal	Based on laws and regulations		
Waste-to-energy			



Hydropower is the only viable technology across all regions, having a lower electricity cost compared to regional BPP. While solar, bioenergy, and on-shore wind are viable in very limited areas.

High upfront capital requirement refrains certain developers from entering the renewable energy market



Unlike fossil fuel powered projects, renewable energy projects are characterized by high upfront costs and low operation/maintenance costs.

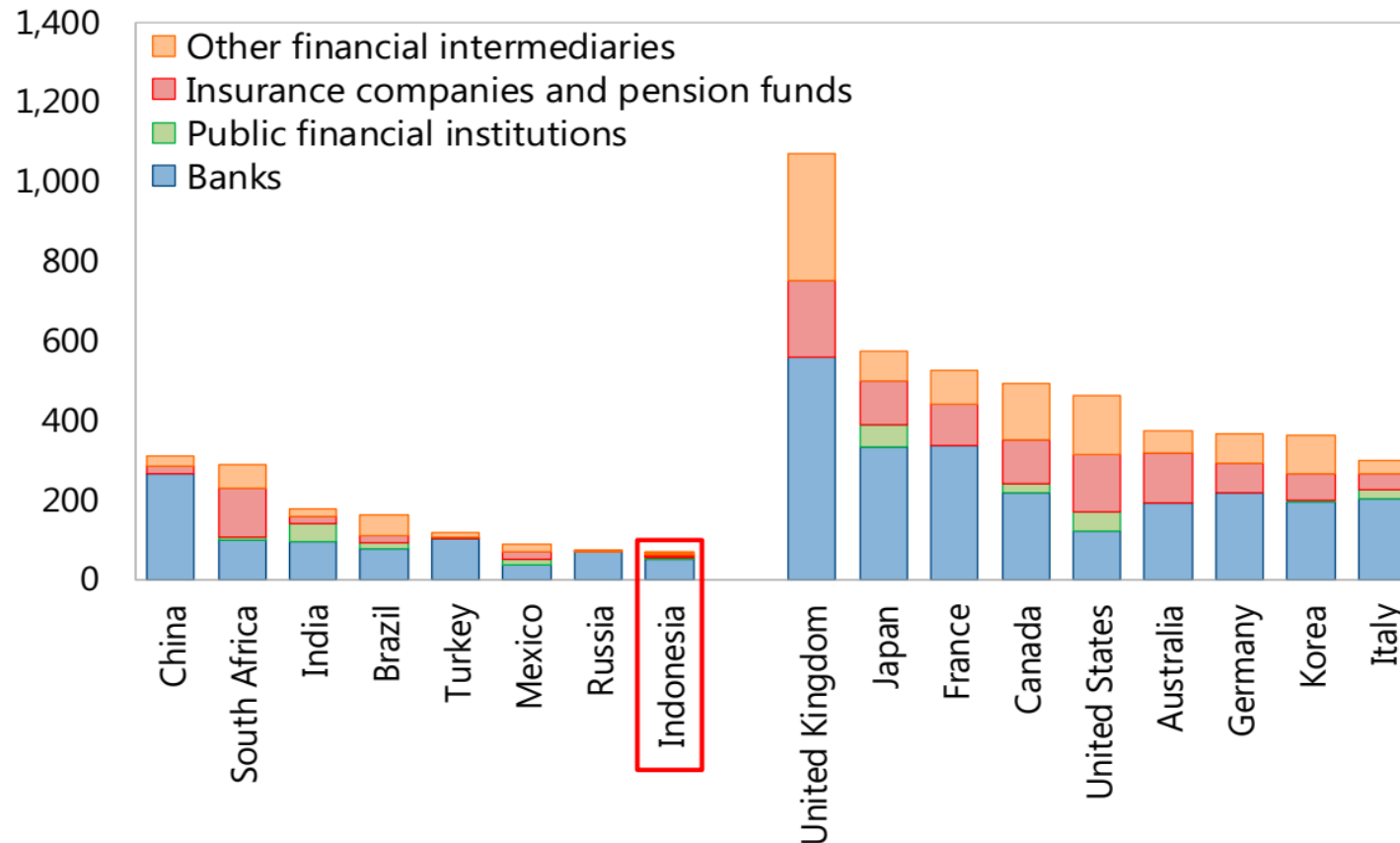
This means developers must utilize/raise more equity and have large enough balance sheet (as opposed to developing coal-fired power plant) to invest in renewables.

Source:

- Australian-Indonesia Research Centre (2017)
- IRENA (2017), Danish Energy Agency(2017)

Banks dominate the holdings of financial assets in Indonesia, yet are constrained when asked to lend long-term

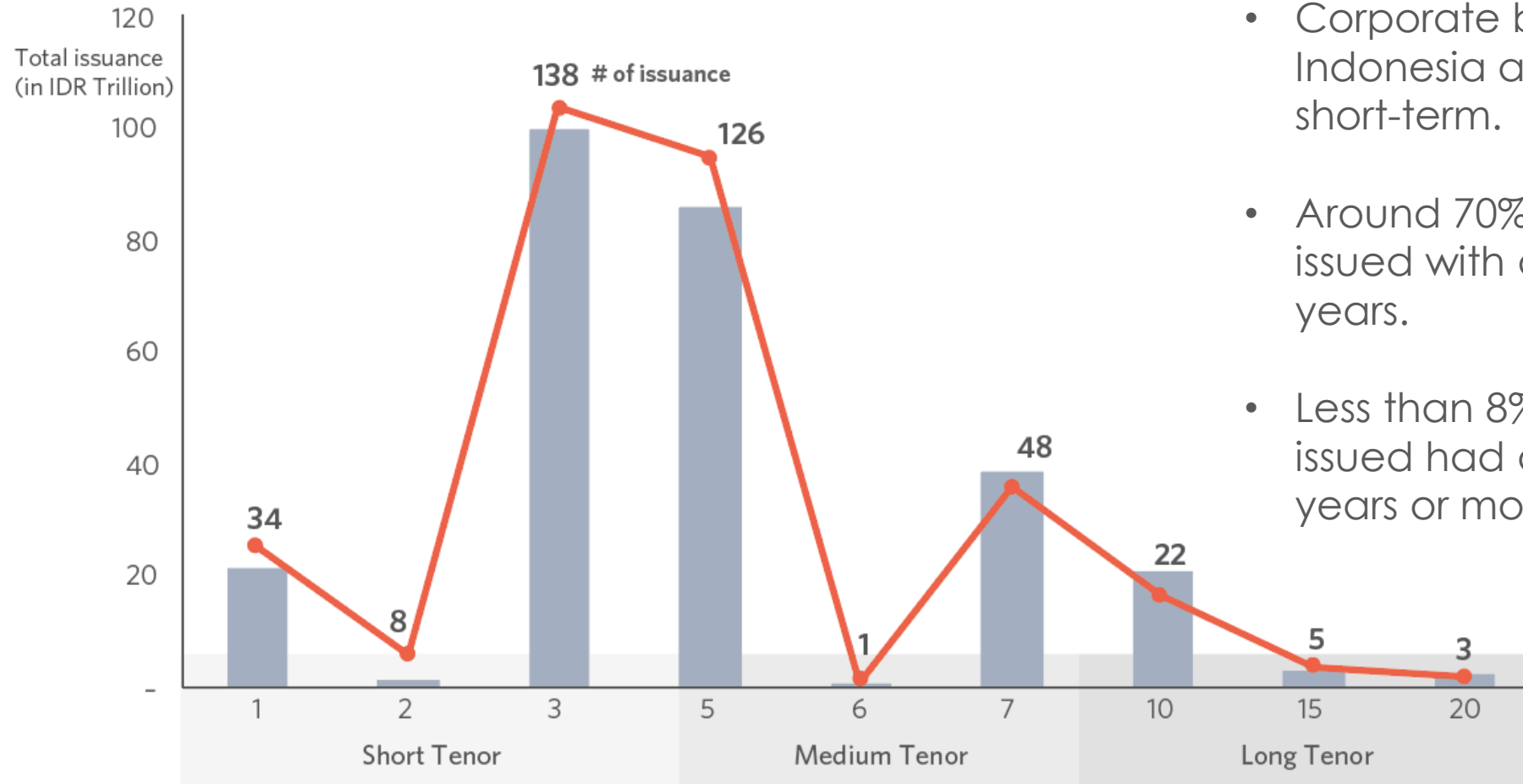
Assets of financial institutions



- Banks dominate the holdings of financial assets in Indonesia.
- Banks are constrained in their ability to provide long-term debt financing due to reliance on short-term deposits.

Source: International Monetary Fund Country Report No.17/152 (2017)

Local capital markets are small and cannot provide the much-needed long-term debt financing to support renewable energy



- Corporate bond issues in Indonesia are predominantly short-term.
- Around 70% of bonds were issued with a tenor of 3 or 5 years.
- Less than 8% of the bonds issued had a tenor of 10 years or more.

Sources:

- International Monetary Fund Country Report No.17/152 (2017)
- Indonesia Central Securities Depository (2018)

Project sizes are relatively small (compared to coal-fired power plant) and may not be attractive to large developers

Projects	Capacity	Projects	Capacity
WIND <ul style="list-style-type: none"> Jeneponto – South Sulawesi Bantul Tanah Laut – South Kalimantan 	72 MW 50 MW 70 MW	GEOTHERMAL <ul style="list-style-type: none"> Rajabasa – Lampung Sorik Merapi – North Sumatera Sungai Penuh – Jambi Wai Ratai – Lampung Lumut Balai – South Sumatera Gunung Endut – Banten Lainea – South Sulawesi Sembalun – NTB Sumani – West Sumatera Wapsalit – Maluku Danau Ranau – Lampung Gunung Sirung – NTT Gunung Ciremai – West Java Kotamobagu – North Sulawesi Dieng Expansi – Central Java Wae Sano – Flores, NTT 	220 MW 160 MW 110 MW 55 MW 55 MW 40 MW 20 MW 20 MW 20 MW 5 MW 40 MW 5 MW 110 MW 80 MW 10 MW 30 MW
SOLAR PV <ul style="list-style-type: none"> Kubu – Bali Jembrana – Bali North Sulawesi Gorontalo 	50 MW 50 MW 21 MW 10 MW		

- Identified projects in pipeline are relatively small-scale.
- Small-scale projects tend to attract developers with small balance sheet, whereas RE projects are characterized by high capital costs.

There is limited appetite for investment from commercial banks

Existing renewable energy projects

Projects	Capacity	Projects	Capacity
WIND <ul style="list-style-type: none"> • Sidrap – South Sulawesi • Nusa Penida – Bali • Sangihe & Selayar – Sulawesi 	75 MW 0.735 MW 0.54 MW	GEOHERMAL <ul style="list-style-type: none"> • Kamojang – Darajat, West Java • Cibeureum – West Java • Pangalengan – West Java • Sarulla – North Sumatera • Dataran Tinggi Dieng – Central Java • Lahendong – North Sulawesi • Way Panas – Lampung • Sarulla – North Sumatera • Ulubelu – Lampung • Tasikmalaya – West Java • Ulumbu – NTT 	505 MW 377 MW 282 MW 330 MW 330 MW 120 MW 220 MW 110 MW 55 MW 30 MW 10 MW
SOLAR PV <ul style="list-style-type: none"> • Oelpuah, Kupang – NTT • Karangasem – Bali • Bangli – Bali • Morotai – North Maluku • Gili Trawangan – NTB • Solor Barat – Flores, NTT • Kabaena – South East Sulawesi 	5 MWp 1 MWp 1 MWp 0.6 MWp 0.6 MWp 0.275 MWp 0.2 MWp	BIOENERGY <ul style="list-style-type: none"> • Riau Prima Energy, Biomass – Riau • Navigat Organic, MSW – Bekasi • Growth Asia, POME – North Sumatera • Meskom Agro Sarimas POME – Riau • Victorindo, POME – North Sumatera 	15 MW 12 MW 10 MW 10 MW 3 MW
MINI HYDRO <ul style="list-style-type: none"> • Ordi Hulu - North Sumatera • Batu Gajah – Riau • Bindu 1 – South Sumatera • Semendo – South Sumatera • Batu Brak, Lampung • Padang Guci 2 – Bengkulu • Bayang Nyalo, West Sumatera • Wae Meleson, Lampung 	10 MW 10 MW 10 MW 9 MW 7.7 MW 7 MW 6 MW 2.8 MW	LARGE HYDRO <ul style="list-style-type: none"> • Cirate – West Java • Asahan – North Sumatera • Maninjau – West Sumatera • Musi – Bengkulu • Larona – South Sulawesi • Sulewena Poso III – Central Sulawesi 	1,008 MW 180 MW 68 MW 210 MW 165 MW 400 MW

Limited experience in renewables market

- There are limited number of projects in Indonesia, indicating banks' limited exposure/expertise in the sector.
- Banks are more likely to finance in 'mature and lower risk technologies' such as hydro.

Local banks don't do project finance

- Local commercial banks have limited expertise in implementing non-recourse project finance, even more so for renewable energy projects.

Strict capital and liquidity requirements

- RE projects typically demand long-term debt, which require banks to allocate higher capital for a long period and increase its stock of liquid assets.

The Guarantee Landscape

Understanding the existing guarantee instruments available in the market, their penetration into the market, gaps, and opportunities

Guarantee instruments are generally available, but with a lot of variation in coverage

- There are a total of ten guarantee providers across the Indonesian market
- These ten organizations provide 13 guarantee products, which primarily cover:
 - Political risk,
 - Public sector performance risk, and
 - Commercial risk
- Identified guarantee providers include: IFC, CGIF, GuarantCo, IIGF, MIGA, ADB, JBIC, AIIB, USAID, and AFD

Types of guarantee products currently available in the market

Type of Guarantee	Risks Coverage	Definitions
Political Risk Guarantee	<ul style="list-style-type: none"> Currency inconvertibility and transfer restriction cover 	<ul style="list-style-type: none"> Losses arising from an investor's inability to convert local currency into hard currency due to government action
	<ul style="list-style-type: none"> Breach of contract/ contract disputes 	<ul style="list-style-type: none"> Losses arising from the utility's breach or repudiation of a contract (e.g. breach of a PPA by a government entity).
	<ul style="list-style-type: none"> Expropriation cover 	<ul style="list-style-type: none"> Losses arising from government action including nationalization, deprivation, confiscation, which reduce investors' ownership or control over an asset.
	<ul style="list-style-type: none"> War, terrorism, and civil disturbance cover 	<ul style="list-style-type: none"> Destruction of business due to political violence, including revolution, insurrection, coups d'état, sabotage, and terrorism.
Public Sector Performance Risk	<ul style="list-style-type: none"> Non-honoring of financial obligations 	<ul style="list-style-type: none"> Losses resulting when a sovereign or state-owned enterprise defaults on financial payment obligations
	<ul style="list-style-type: none"> Other risks 	<ul style="list-style-type: none"> Delay in permits and licenses Not honoring financial closure Change in regulations
Commercial Risk	<ul style="list-style-type: none"> Non payment by the borrower/ issuer 	<ul style="list-style-type: none"> Debt service default by the borrower regardless of the cause of default on the guaranteed portion of the principal and interest due
	<ul style="list-style-type: none"> Credit enhancement 	<ul style="list-style-type: none"> Enhance credit rating for debt instruments (loans and bonds)

Most guarantee providers cover the power market in Indonesia, but none has specific focus on renewable energy

SECTORS	RISKS		
	Political Risk	Public Sector Performance Risk	Commercial Risk
Power	High	High	High
Infrastructure*	Medium	Medium	High
Banking/ Capital Market	Medium	Low	Medium
Energy (Oil & Gas, Mining)	Low	Medium	Medium
Manufacturing	Low	Low	Medium
Agribusiness	Low	Low	Medium

- In terms of sector coverage, the power sector has very high access to guarantee products.
- However, guarantee providers do not always exclude fossil fuel-based power plant projects.
- No guarantee instruments have a specific focus on renewable energy projects.

There is a strong appetite to guarantee debt instruments

UNDERLYING ASSET	RISKS		
	Political Risk	Public Sector Performance Risk	Commercial Risk
Equity	Low	Medium	
Shareholder Loans & Shareholder Loans Guarantees	Medium	Medium	Low
Non-shareholder Loans	High	High	High
Bonds	Medium	Medium	High
Technical assistance & management contracts	Medium	Low	Medium
Asset Securitizations	Low	Low	

- In terms of underlying assets coverage, credit instruments (particularly non-shareholder loans), have a lot of coverage.

Except for IIGF, no guarantee provider has a focus on Indonesian market

RISKS				
GEOGRAPHY		Political Risk	Public Sector Performance Risk	Commercial Risk
	Global	Low	Low	Medium
	Developing Countries	Medium	Low	High
	ASEAN			Low
	Indonesia		Low	

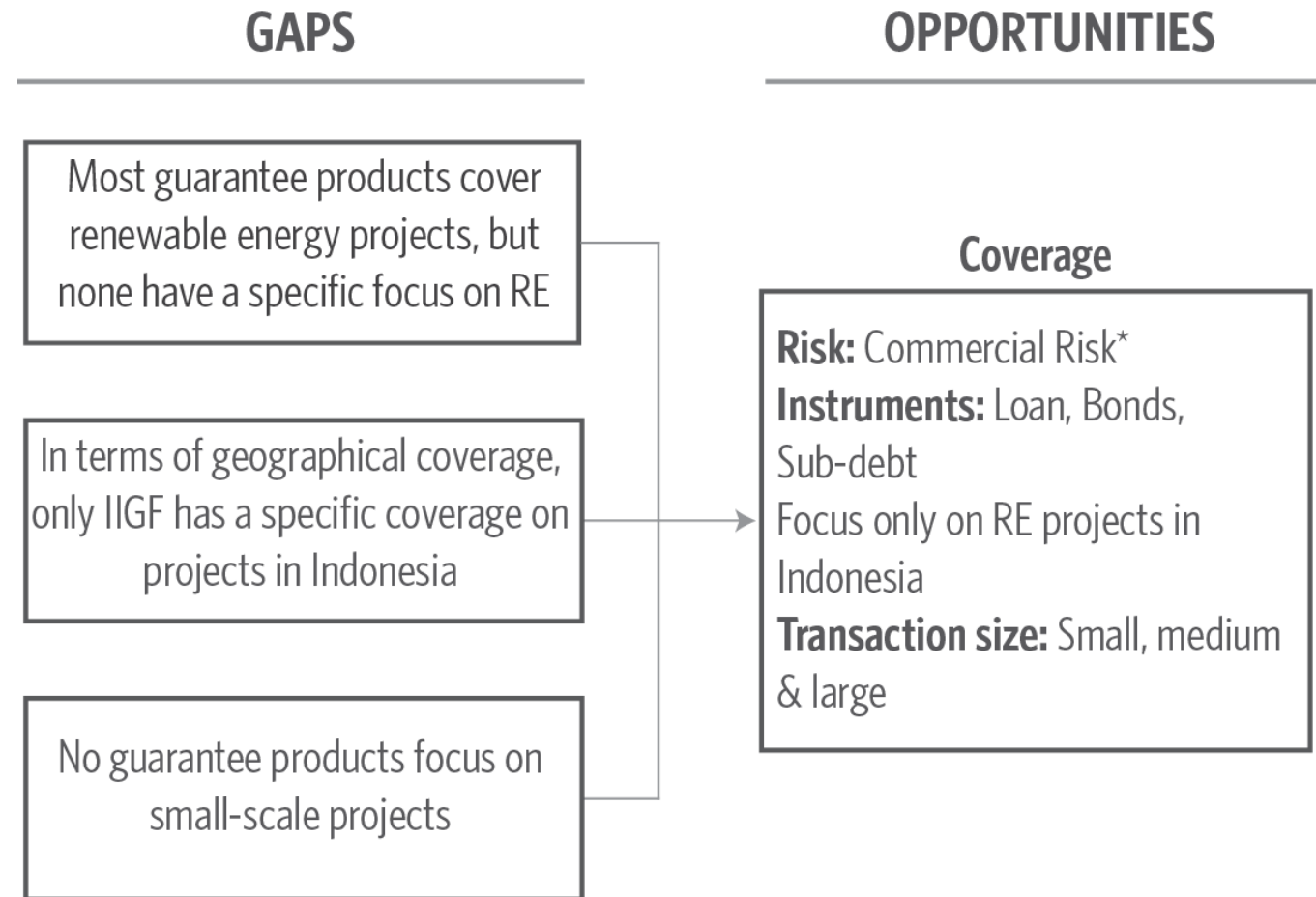
- Almost all identified providers cover multiple countries (global coverage).
- Only IIGF has a focus on Indonesian market

Penetration of guarantee instruments in Indonesia is relatively low and tend to focus on large-scale transactions

Institutions	Instrument	Sector	Number of deals	Underlying	Total Coverage
MIGA	Political Risk Guarantee	Renewables	2	Non-shareholders loans	USD 610 mn
		Power	2	Equity	USD 121.2 mn
		Mining	2	Equity	USD 257 mn
		Manufacturing	1	Equity Shareholder Loan	USD 2.4 mn
		Telecommunication	1	Loan	USD 450 mn
	Non-Honoring of Financial Obligations by a State-Owned Enterprise	Banking	1	Loan	USD 400 mn
CGIF	Bonds guarantee	Banking	2	Bond	USD 720 bn
IIGF	Non-honoring of financial obligations	Infrastructure	9	N/A	IDR 46.8 trillion
		Telecommunication	3	N/A	IDR 9.1 trillion
		Power	1	N/A	N/A
US AID	Loan guarantee	Microfinance	1	Non-shareholders loans	USD 16.4 mn

- We have identified a small number of transactions using guarantee instruments in Indonesia.
- Most guarantees issued cover large transactions (> USD 100 million).

Opportunities exist for developing a guarantee instrument dedicated for RE projects in Indonesia



**Limited opportunities exist to develop a guarantee instrument focusing on public sector performance risk, particularly in waste-to-energy projects due to the typically high local government involvement in the project*

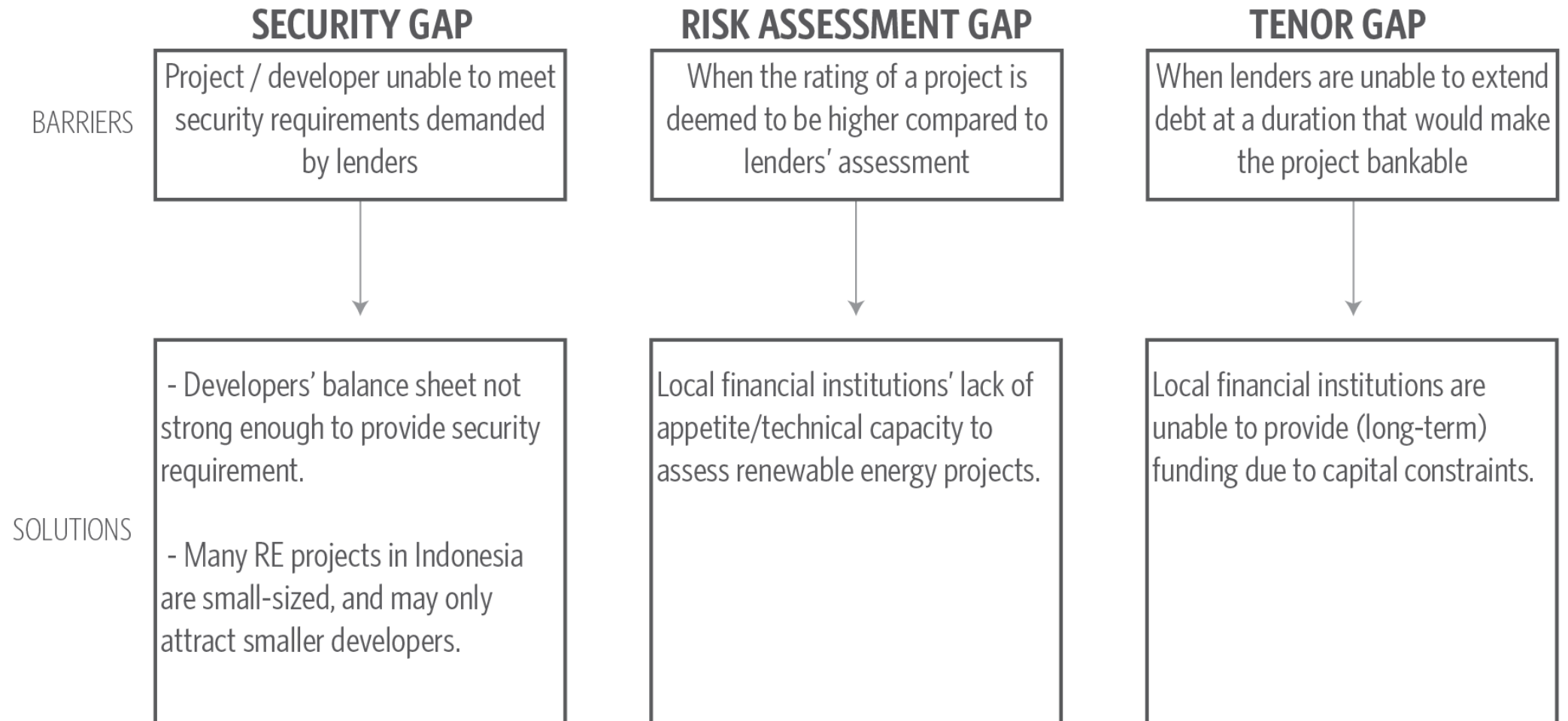
Addressing Investment Barriers

Understanding how guarantees can help address some of the investment barriers in renewable energy projects in Indonesia

Guarantees are broadly categorized into three types of products and each provide different benefits

	POLITICAL RISK GUARANTEE	CREDIT GUARANTEE	PUBLIC SECTOR PERFORMANCE RISK
BENEFITS	<ul style="list-style-type: none"> - Provides international investors confidence to invest in projects residing in the host country (typically in developing countries). - Allow investors to focus on the commercial aspects of investments. 	<ul style="list-style-type: none"> - Improve access to a larger range of investors (bankability) by achieving higher credit rating. - Promote the development of local capital markets. - Potential to reduce cost of debt 	<ul style="list-style-type: none"> - Provides international investors confidence to invest in projects residing in the host country (typically in developing countries). - Allow investors to focus on the commercial aspects of investments.
COVERAGE FEATURES	<ul style="list-style-type: none"> - Currency inconvertibility and transfer restriction - Breach of contract - Expropriation - War and civil disturbance 	<ul style="list-style-type: none"> - Credit default - Partial / Full 	<ul style="list-style-type: none"> - Sovereign institution defaulting on its financial obligation

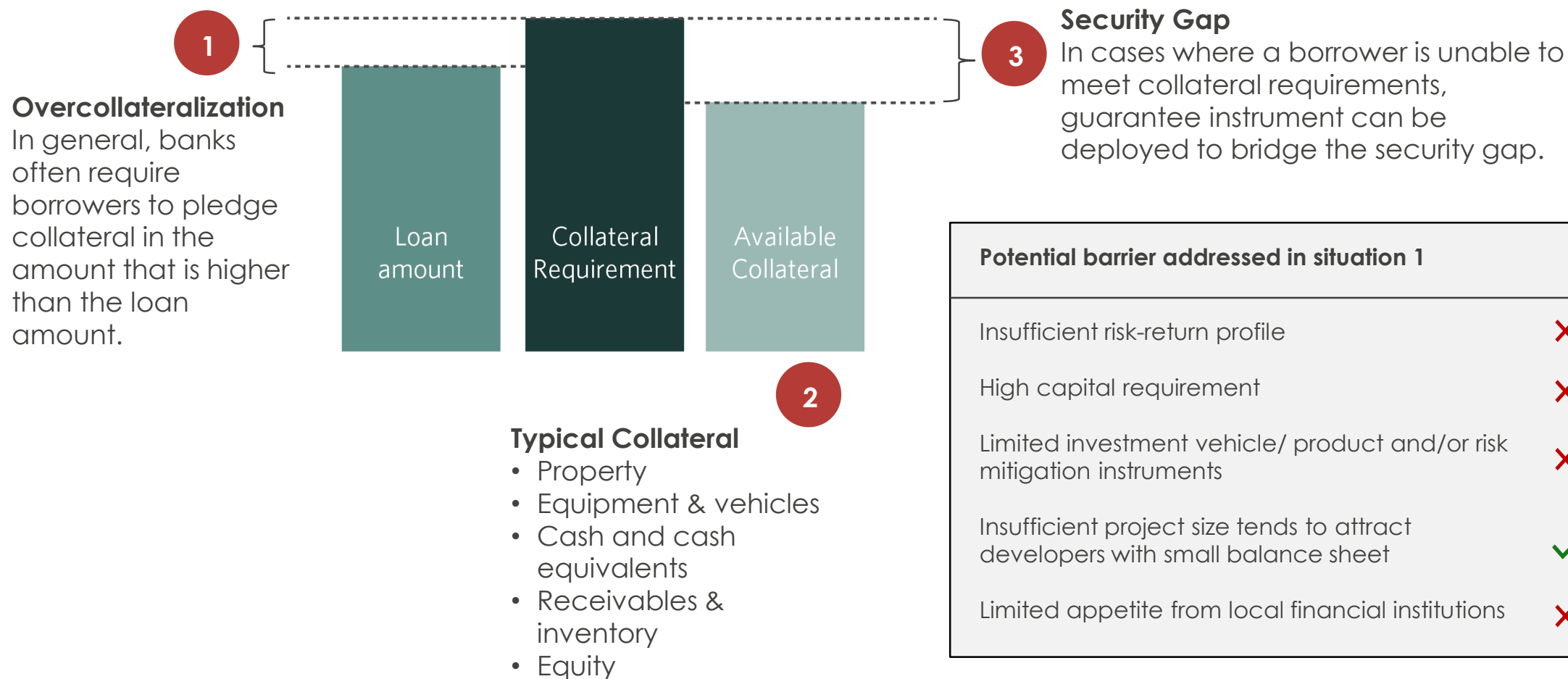
Guarantees can help address some of the investment barriers in renewable energy projects in Indonesia



Deploying Guarantees

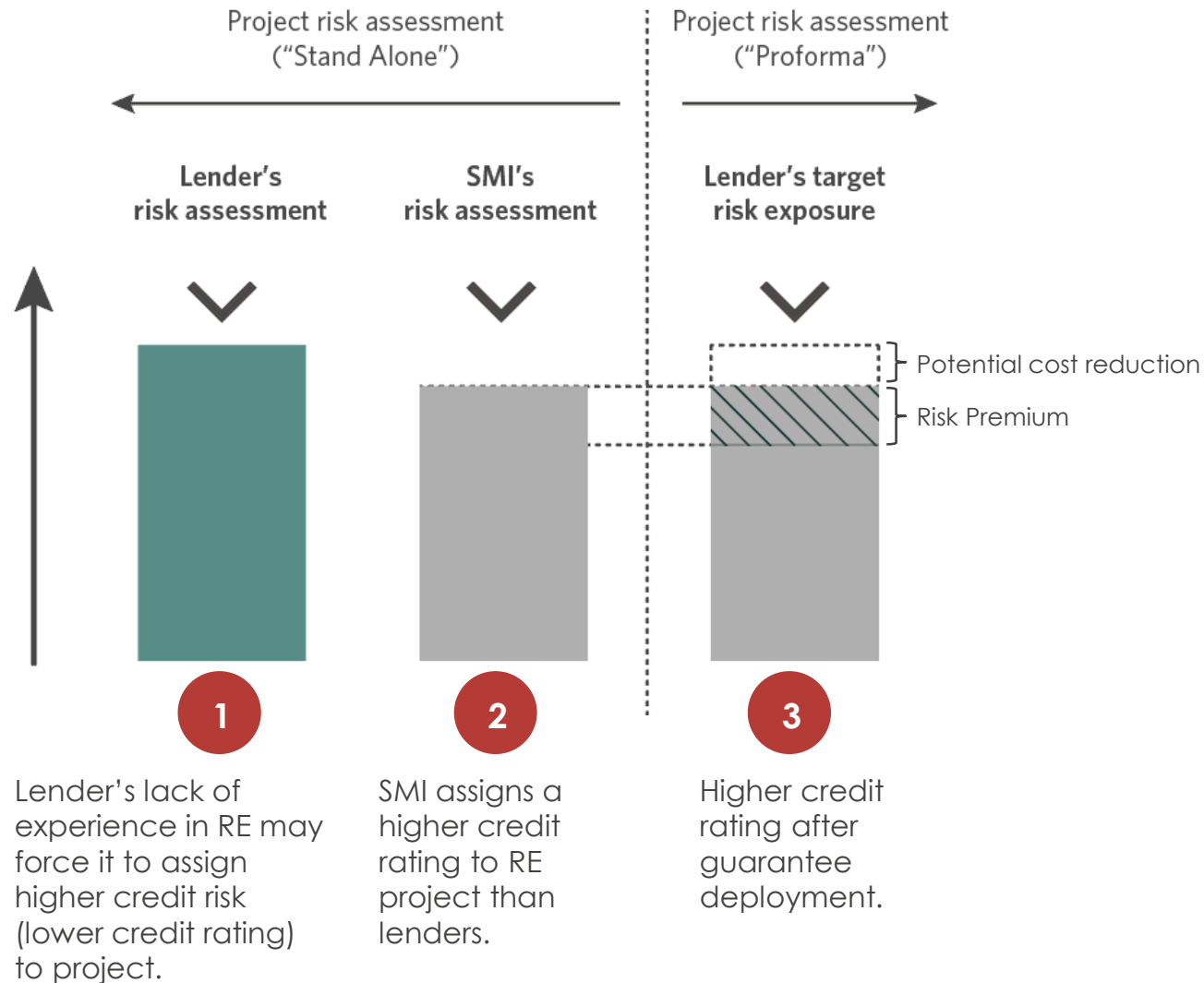
Different situations in which guarantees can be deployed, and what opportunities exist for SMI's guarantee instrument to overcome key investment barriers (without duplicating other providers)

Situation 1: When a borrower is not able to meet collateral requirements (i.e. small developers)



Potential barrier addressed in situation 1	
Insufficient risk-return profile	✗
High capital requirement	✗
Limited investment vehicle/ product and/or risk mitigation instruments	✗
Insufficient project size tends to attract developers with small balance sheet	✓
Limited appetite from local financial institutions	✗

Situation 2: When a guarantor assigns lower credit risk to projects than lenders

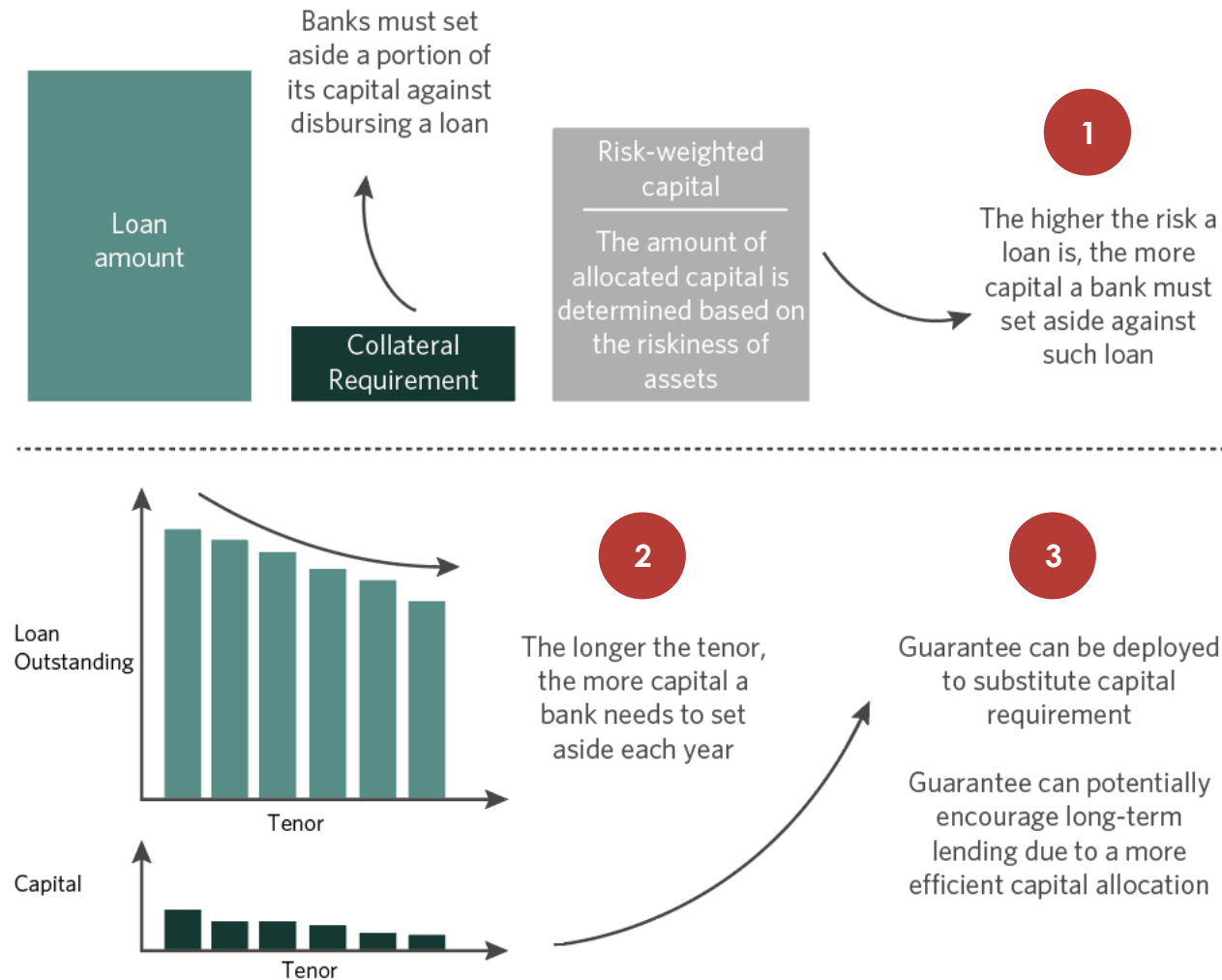


Potential barrier addressed in situation 2

Insufficient risk-return profile	✓
High capital requirement	✗
Limited investment vehicle/ product and/or risk mitigation instruments	✗
Insufficient project size tends to attract developers with small balance sheet	✓
Limited appetite from local financial institutions	✗

Note: The potential for guarantee instrument to reduce cost may be constrained in cases where transaction costs are high

Situation 3: When banks' capital is constrained to provide long-term loan



Potential barrier addressed in situation 3

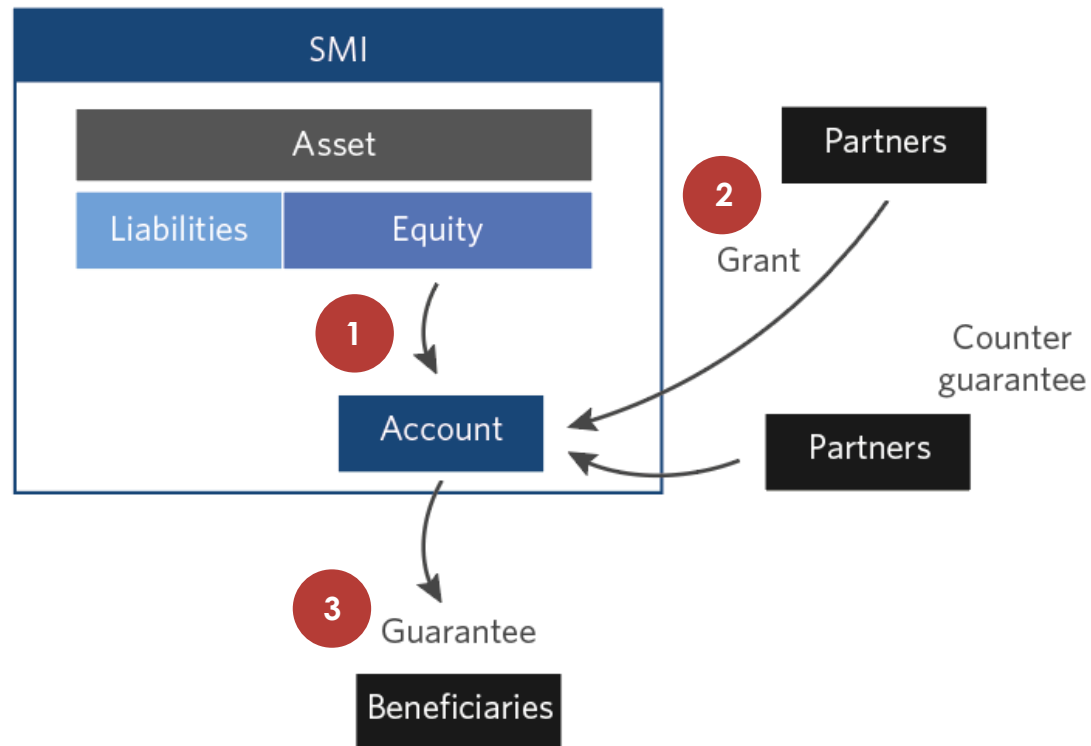
Insufficient risk-return profile	✓
High capital requirement	✗
Limited investment vehicle/ product and/or risk mitigation instruments	✓
Insufficient project size tends to attract developers with small balance sheet	✓
Limited appetite from local financial institutions	✗

Note: Applying guarantee as a substitute for capital is allowed under Basel III framework. However, additional research is required to examine its potential implementation under Indonesian banking regulations.

Instrument Mechanics

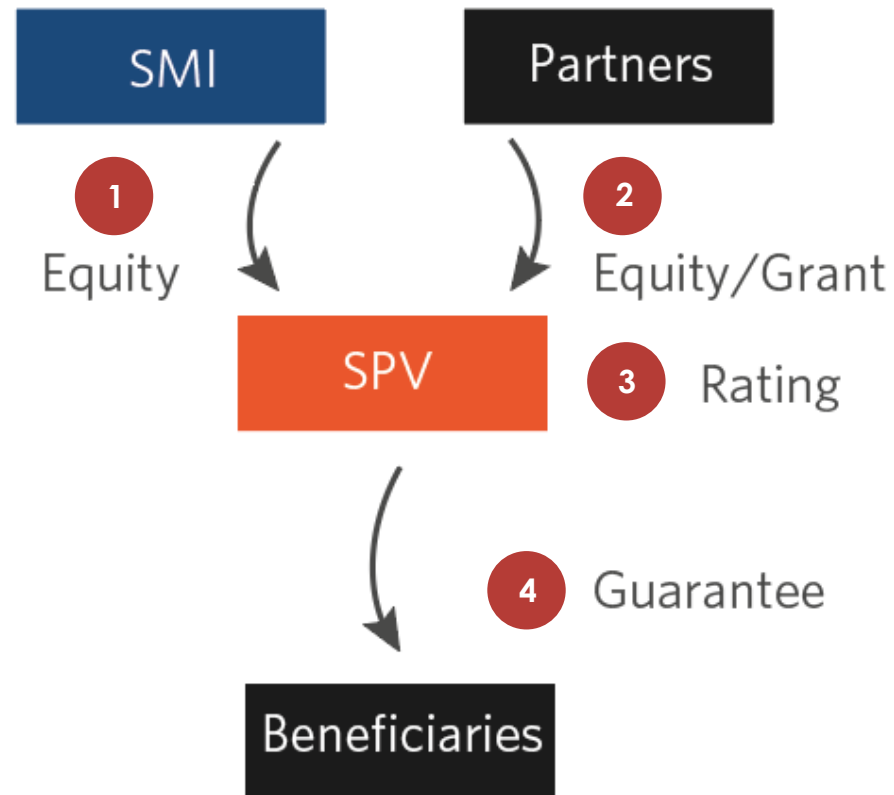
Two options on how a guarantee instrument can be structured and deployed by SMI

Option 1: Guarantee instrument developed as one of SMI's products



- 1** A portion of SMI's equity is reserved (and ring-fenced from other activities) for issuing guarantees.
- 2** SMI can raise funding from other sources, but limited only to grant-like instruments as guarantees are typically issued against equity. In addition, SMI can also protect itself by procuring counter-guarantee from partners
- 3** SMI provides guarantees to beneficiaries.

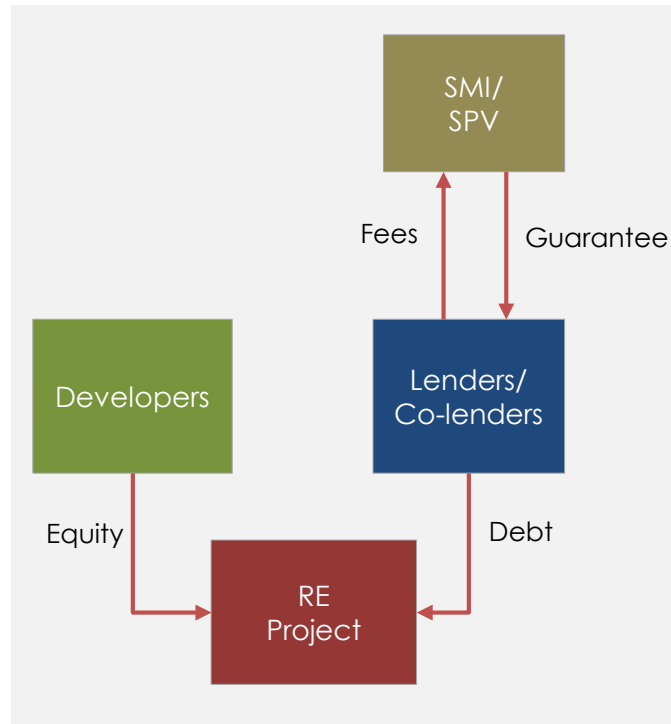
Option 2: Guarantee instrument developed by setting up a new entity



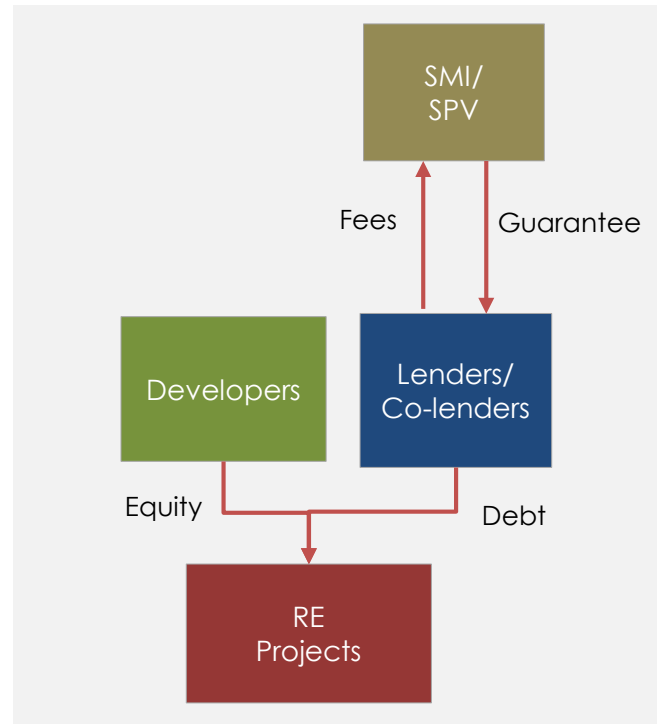
- 1 SMI provides the majority of equity into the new entity to have a controlling stake of business and operations.
- 2 SMI can raise funding from other sources, but limited only to equity/grant instruments as guarantees are typically issued against equity.
- 3 The new entity can be developed in the form of subsidiary or trust, and will need to be rated by credit rating agency.
- 4 Guarantee becomes the instrument of the SPV.

Guarantees can be extended in project finance, corporate finance or bond issuance transactions

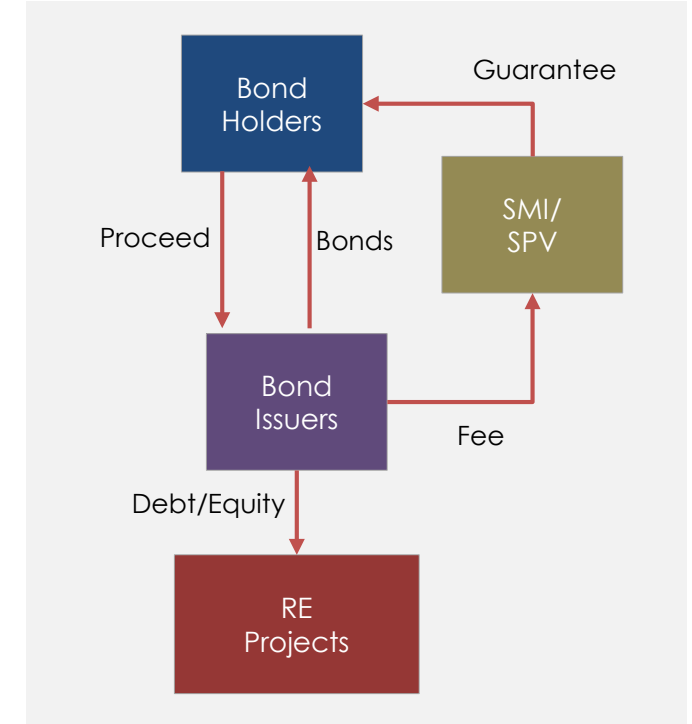
Corporate Finance



Project Finance



Bonds Issuance



Things to consider while designing/developing a guarantee instrument

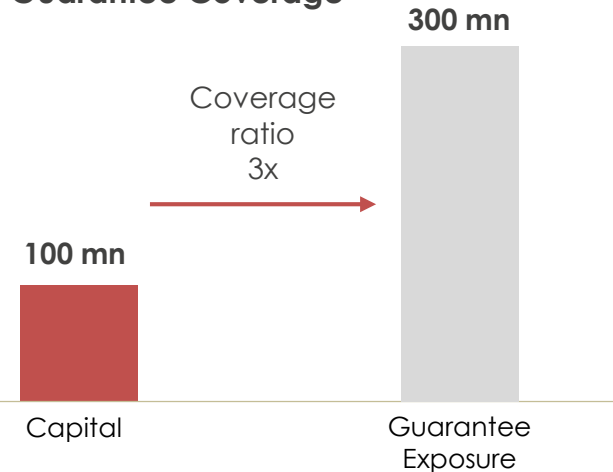
Guarantee Scope	<ul style="list-style-type: none"> ✓ Risk coverage ✓ Full/partial coverage
Eligible Client	<ul style="list-style-type: none"> ✓ Project, Corporation ✓ Investment grade
Underlying Asset	<ul style="list-style-type: none"> ✓ Size ✓ Currency ✓ Maturity
Fees Structure	<ul style="list-style-type: none"> ✓ Front end fee: covers upfront costs (i.e. due diligence, processing transaction, etc.) ✓ Guarantee fee: charged against guaranteed principal outstanding (and interest payment in the applicable interest period). ✓ Commitment fee: charged against any undisbursed loan amount
Extent of risk covered	<ul style="list-style-type: none"> ✓ Final loss: final amount payable to client based on final recovered amount
Others	<ul style="list-style-type: none"> ✓ Max. guarantee coverage ration (i.e. 2.5-3 x capital) ✓ Currency of capital reserves ✓ Legal structure (e.g. limited liability company, trust fund) ✓ Governance system (e.g. committees, independent advisor, rep from contributors)

Examples of guarantee instruments developed by national financial institutions

	#1	#2	#3	#4
Guarantee Name	Partial Credit Guarantee	Overseas Investment Insurance	Overseas Investment Insurance	Overseas-Business Related Financial Guarantee
Guarantor	Indian Renewable Energy Development Agency (IREDA)	China Export & Credit Insurance Corporation (Sinosure)	Nippon Export and Investment Insurance (NEXI)	Korea Eximbank (KEXIM)
Underlying Asset	Bonds	<ul style="list-style-type: none"> Equity Debt 	<ul style="list-style-type: none"> Equity Debt 	<ul style="list-style-type: none"> Debt
Risks covered	Credit enhancement of unconditional and irrevocable partial credit guarantee to enhance the credit rating of the proposed bonds	<ul style="list-style-type: none"> Expropriation War and political riot Breach of contract Exchange risks 	<ul style="list-style-type: none"> Political risk: war, terrorism, force majeure Credit risk 	<ul style="list-style-type: none"> Political risk Credit risk
Eligible beneficiary	Grid-connected renewable energy projects in India, solar and wind energy	<ul style="list-style-type: none"> Overseas project companies financed by Chinese investors Overseas investment projects of Chinese companies 	<ul style="list-style-type: none"> Japanese company/subsidiary/joint venture in a foreign country 	<ul style="list-style-type: none"> Domestic/foreign financial institution: <ul style="list-style-type: none"> Debt financing Bondholders
Terms	<ul style="list-style-type: none"> Up to 25% of bonds issue size (min bonds size INR 1 bn or USD 15 mn) Max exposure 20% of project cost Max tenor 15 years Max DER 3x Min project operational 1 year after COD Min requirement DSCR 1.2x Min credit rating "BBB" 	<ul style="list-style-type: none"> Maximum tenor 20 years Maximum insured percentage 95% 	N/A	<ul style="list-style-type: none"> Up to the amount of principal & interest covered Up to 60 days after the maturity date
Fee	1.80 - 2.90% p.a.	N/A	N/A	N/A
Case in Renewable Energy	Bonds issuance by ReNew Wind Energy (USD 63.6 mn) and Hindustan Power (USD 53.6 mn)	Chinese solar producers, JA Solar Holdings Co Ltd Amount insured: USD 145 million	Guaranteed a portion of loan provided by Mizuho Bank, Ltd. to SBG CleanTech ProjectCo Private Limited, a solar power generation project in India	Guaranteed a portion of co-financing to PT Cirebon Electric power, for Cirebon thermal power project plant in Indonesia

Illustration - guarantee instrument transaction from SMI's perspective

Guarantee Coverage



Example: Project Size 20 MW

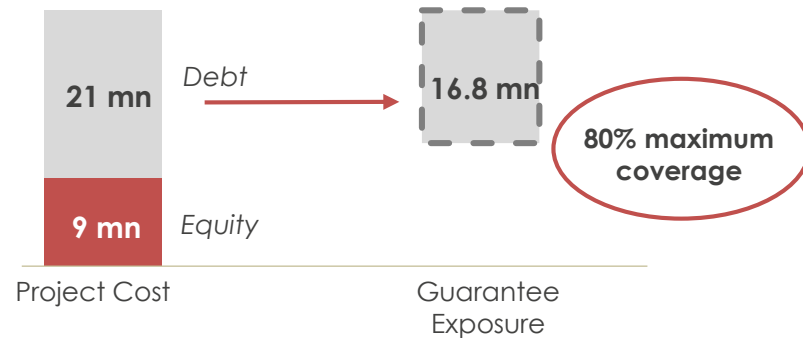


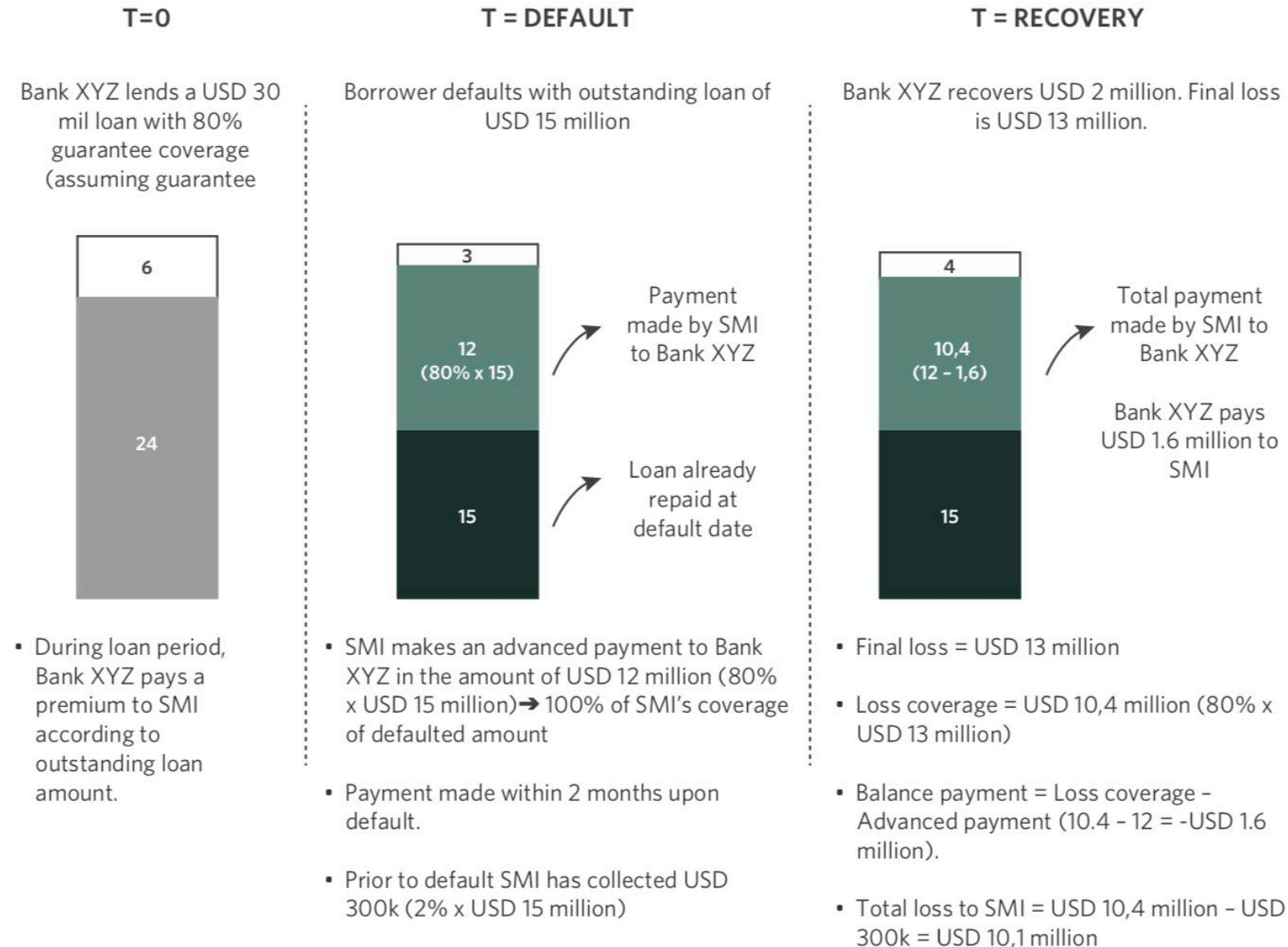
Illustration for solar PV project for different project sizes

Project Size (MW)	a	10	15	20
Capital Cost (USD/MW)	b	1,5 million		
Project Cost (USD mn)	(a x b)=c	15	22.5	30
Debt 70% (USD mn)	(70% x c)=d	10.5	15.75	21
Guarantee partial coverage 80% (USD mn)	(80% x d)=e	8.4	12.6	16.8
Potential number of projects covered by guarantee	(300mn/e)=f	35	23	17
Potential new capacity additions (MW)	(a x f)	350	345	340
Potential private finance leverage (USD mn)	(c x f)	525	517.5	510

Potential Benefits for SMI

- SMI potential yearly revenue **USD 6 million/year** (guarantee premium 2% x 300 million)
- New capacity additions of renewable energy projects: **340 – 350 MW**
- Private finance leverage: **USD 510 – 525 million**

Illustration - guarantee instrument transaction in the event of default



Note: This is only for illustration purposes. The mechanism to call for guarantee depends on the terms of the instrument (slide 40).

Potential challenges faced by guarantee providers in Indonesia (1/2)

- Guarantee providers will have to compete with developers (and their shareholders) when deploying a guarantee. The provision of corporate/shareholder guarantee is a common practice in corporate lending/project finance setting (and potentially has lower cost than the guarantee premium).
- Many banks require a “first demand” feature in the guarantee instrument. First demand means that banks can demand an unconditional and irrevocable financial reimbursement in case of a default. This is challenging to implement because a guarantor typically has to do some due diligence and requires banks to submit necessary documentations prior to making financial reimbursement.

Potential challenges faced by guarantee providers in Indonesia (2/2)

- In the case of a default, the title to the borrower's collateral remains with the lender. This means that the guarantor will have limited involvement and will have to rely on banks in the recovery process. This highlights the importance of performing front-end due diligence prior to making decisions about extending a guarantee.
- Guarantee instrument application in Indonesia is limited to date. Guarantor needs to build awareness among financial institutions and developers in regards to the potential of the guarantee instrument.

Active Guarantees

Case studies of active guarantees

Rajamandala Hydropower Project – Political Risk Guarantee

Transaction Overview

Date: August 2014

Country: Indonesia

Guarantee Name: Political Risk Guarantee

Guarantor: Multilateral Investment Guarantee Agency ("MIGA")

Sector: Renewable Energy

Beneficiaries:

Japan Bank for International Cooperation ("JBIC")
Mizuho Bank, Ltd. ("Mizuho")

Project: Rajamandala Hydropower project plant

MIGA Guaranteed Amount: USD 200 mn

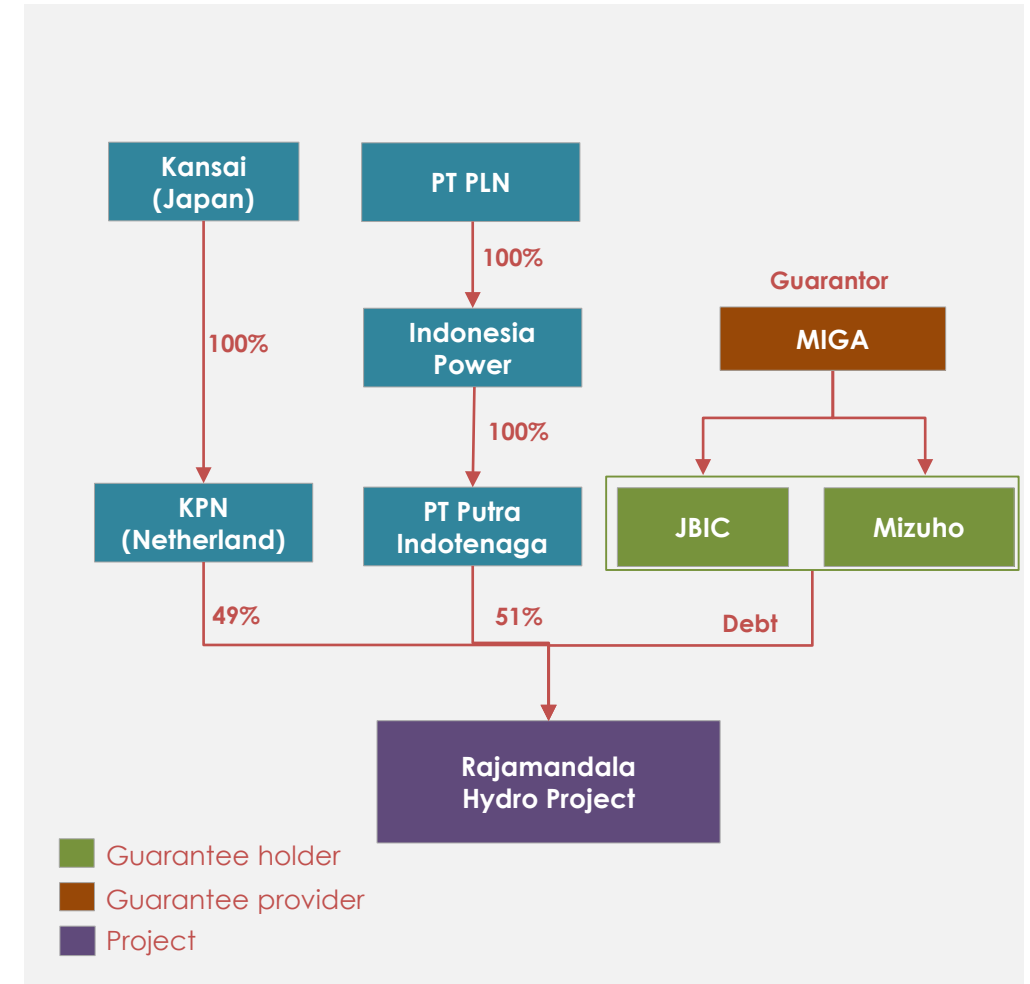
Loan Tenor: 19 years

Risks covered:

Expropriation, Currency Inconvertibility & Transfer Restriction, War & Civil Disturbance, Breach of Contract of SOE

Outcome:

- Development and operation of a 47 MW run-of-the-river hydropower plant on BOT basis
- One of the first Indonesian PPA's without sovereign support



ReNew Wind Energy Ltd – Partial Credit Guarantee

Transaction Overview

Date: September 2015

Country: India

Guarantee Name: Partial Credit Guarantee Facility for credit enhancement of Project Bonds

Guarantor: India Infrastructure Finance Co. Ltd ("IIFCL") with irrevocable back-stop guarantee from ADB

Sector : Renewable Energy

Beneficiaries: ReNew Wind Energy (Jath) Limited ("ReNew")'s bondholders

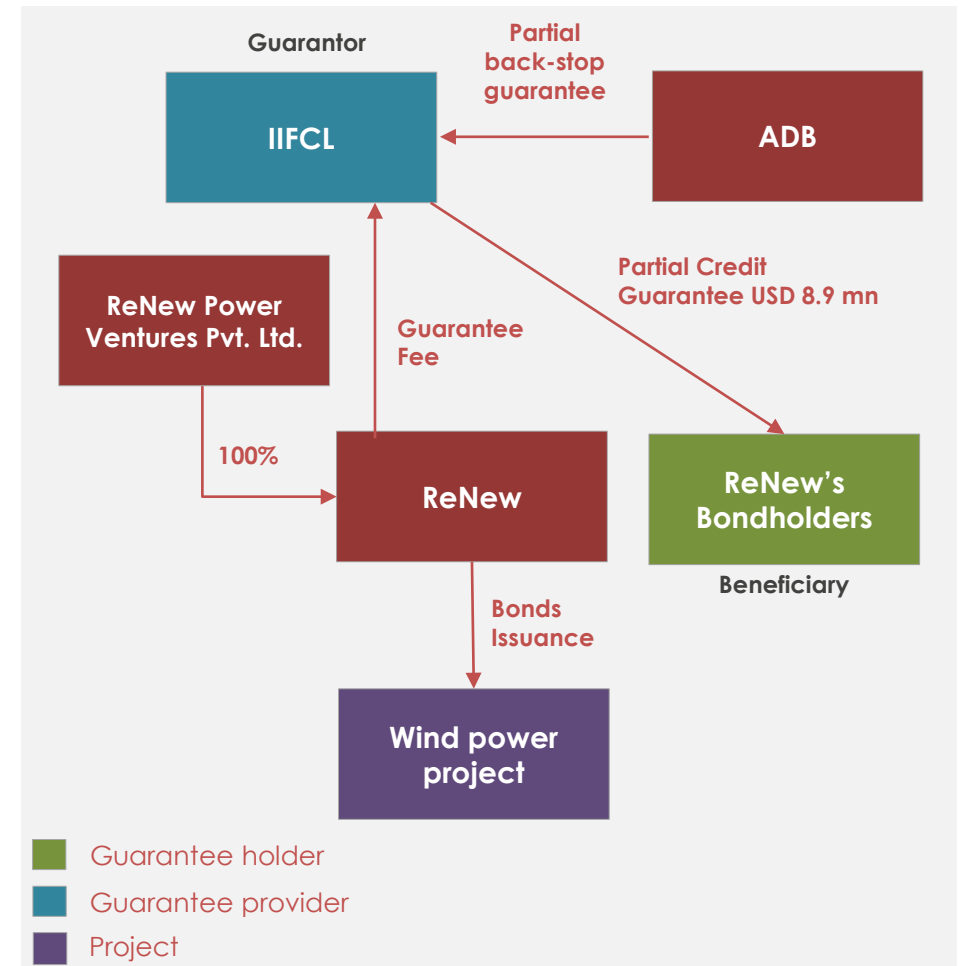
IIFCL Guaranteed Amount: PHP 592.2 mn (USD 8.9 mn)

Transaction Size: USD 63 mn

Guarantee fee: 2.0% p.a.

Outcome:

- This issuance of 84.65 MW wind power project in Maharashtra is the first successful credit enhanced bond issued by IIFCL in the country
- The bond's rating was credit enhanced to AA+



Conclusion



There is a need for developing a tailored guarantee instrument for the renewable energy market in Indonesia (1/3)

- A guarantee instrument is one of the many potential de-risking instruments to help accelerate renewable energy development in Indonesia.
- A guarantee is not the only solution to address a range of investment barriers in renewable energy projects in Indonesia.
- However, there are opportunities where a guarantee can (partially) address investment barriers:
 - Addresses the security gap — required in small projects because of its tendency to attract small developers with an insufficient balance sheet.
 - Improves the risk-return profile of renewable energy projects — in situations where a guarantor assigns a lower risk profile to a project than the potential lenders (and where the cost of guarantee is lower than the reduction in cost of debt).
 - Increases access to long-term funding from local banks due to improved risk profile.

There is a need for developing a tailored guarantee instrument for the renewable energy market in Indonesia (2/3)

- There are ten organizations providing 13 guarantee products covering the Indonesian market, yet none provide specific coverage for the renewable energy sector. As resources are limited for deploying guarantees, they become less accessible due to competition from other sectors (not only in Indonesia but also in other countries).
- As the perception of political risk and public sector performance in Indonesia has improved in recent years, the demand for guarantee instruments to cover these risks have gradually subsided among financial institutions—in addition, the existence of IIGF has also (partially) covered these risks.
- The development of a credit guarantee for renewable energy in Indonesia offers the most potential to help rejuvenate the market while also catalyzing private investments.
- The development of a credit guarantee by a local financial institution can also help increase the guarantee's visibility and accessibility to local stakeholders.

There is a need for developing a tailored guarantee instrument for the renewable energy market in Indonesia (3/3)

- However, there are potential challenges to effectively implement a guarantee instrument in Indonesia, namely:
 - I. competition with shareholder/corporate guarantee, which tends to have a lower cost;
 - II. “first demand” feature often required by financial institutions;
 - III. limited involvement in recovery proceedings in case of default; and
 - IV. limited awareness about a guarantee instrument among financial institutions.

Appendix



Lists of Experts

Names	Position	Organizations
Development Financial Institutions		
Jean-Hugues De Font-Reaulx		French Development Agency (AfD)
Jens Wirth	Deputy Director Energy Sector	German Development Bank (KfW)
Yuichiro Yoi	Senior Investment Specialist	Asian Development Bank (ADB)
Stephan Claude Frederic Garnier	Lead Energy Specialist	World Bank
Lamtiurida Hutabarat	Senior Investment Officer	International Finance Corporation (IFC)
Lazeena Rahman	Investment Officer	International Finance Corporation (IFC)
Mason Wallick	Managing Director	Infunde Development (InfraCo Asia Group)
Yuichiro Ono	Vice President Investment	Indonesia Infrastructure Finance (IIF)
Guarantee Providers		
Boo Hock Khoo	Vice President Operations	Credit Guarantee Investment Facility (CGIF)
Jenny Koh	Regional Director Asia	GuarantCo

Methodology

Concept development and Planning

- Identify research questions

Data collection and analysis

- Literature review
- Survey
- Experts interview
- Focus Group Discussion

Report preparation

- Report

Definitions of key barriers

Key Barriers	Definition
Unfavorable policy environment	Due to unattractive policy regulations (i.e. pricing regime/revenue support, unfavorable terms of PPA, etc) and regulatory uncertainty
Limited appetite from local financial institutions	Financial institutions have low interest due to unfamiliarity/lack of experience with RE technologies and inadequate balance sheet to finance long-term project
Limited investment vehicle/product and/or risk mitigation instruments in financial markets	Lack of suitable investment vehicle/products and/or risk mitigation instruments or products due to undeveloped financial markets
High capital requirement	High upfront investment cost associated with RE projects makes it difficult for certain developers with constrained balance sheet to raise capital
Insufficient risk return profile	Project's risks far outweigh expected return
Insufficient project size	The size of available projects aren't large enough to attract credible investors

Definitions of key risks

Classification	Risks	Definition
Political, Policy, and Social	Political Risk	Due to illegitimate actions (i.e. corruption and bribes, repeal of contracts) of public authorities that affect, in a discriminatory way, to foreign companies/investors
	Policy Change	Change of support to tariffs or other key policy aspects impacting project's feasibility
	Social Risk	Resistance from local communities against infrastructure development in their region
Technical and Physical Risks	Construction and Operation Risks	Due to uncertainty over the cost and timing of construction and over the cost of operations.
	Resource Risk	Originate from uncertainty over the effective availability of the natural resource on the specific site. These risks are increased by the lack of highly accurate, site-specific data.
	Environmental impact Risk	Relate to unexpected adverse impacts of the project on its surrounding environment
Market and Commercial Risks	Currency Risk	Occur when there is a currency mismatch between funding and revenues
	Off-take Risk	Relate to the uncertainty on the demand for the electricity, and on the price at which the electricity can be sold
	Financing Risk	Relate to uncertainties in access to capital for financing and re-financing, in terms of availability and cost
	Counterparty Risk	Refer to the ability of counterparties (project developer, lenders, contractors) to honor contracted obligations and not default

Appendix

Guarantee Providers

Guarantee providers

Multilateral Investment Guarantee Agency (MIGA)

	Political Risk Guarantee	Non-honoring of Financial Obligation (NHFO)
Risks Coverage	<ul style="list-style-type: none"> • Currency inconvertibility and transfer restriction cover • Breach of contract cover • Expropriation cover • War and civil disturbance cover 	<ul style="list-style-type: none"> • Non-honoring of sovereign financial obligations • Non-honoring of SOE financial obligations • Credit enhancement
Eligible Beneficiary	<ul style="list-style-type: none"> • MIGA member countries • Cross-border • Min 1 year maturity and long term investor commitment 	<ul style="list-style-type: none"> • MIGA member countries • Cross-border • Min 1 year maturity and long term investor commitment
Investments Covered	<ul style="list-style-type: none"> • Greenfield/ existing • Equity • Shareholder Loans • Shareholder Loan Guarantees • Non-shareholder loans 	<ul style="list-style-type: none"> • Greenfield/ existing • Equity • Shareholder Loans • Shareholder Loan Guarantees • Non-shareholder loans • TA • Management contracts • Bonds • Asset securitizations • Leasing, services, franchising & licensing agreements
Terms Coverage	<p>Guarantee percentage:</p> <ul style="list-style-type: none"> • Equity up to 90% • Debt up to 95% <p>Tenor:</p> <ul style="list-style-type: none"> • Min 1 year, up to 20 years <p>Pricing:</p> <ul style="list-style-type: none"> • Economic capital consumption-based pricing model <p>Sector:</p> <ul style="list-style-type: none"> • Multi-sector 	<p>Guarantee percentage:</p> <ul style="list-style-type: none"> • Equity up to 90% • Debt up to 95% <p>Tenor:</p> <ul style="list-style-type: none"> • Min 1 year, up to 20 years <p>Pricing:</p> <ul style="list-style-type: none"> • Economic capital consumption-based pricing model <p>Sector:</p> <ul style="list-style-type: none"> • Multi-sector

Guarantee providers

Asian Development Bank (ADB)

	Political Risk Guarantee	Partial Credit Guarantee
Risks Coverage	<ul style="list-style-type: none"> • Transfer restriction • Expropriation • Political violence • Contract disputes 	<ul style="list-style-type: none"> • Non-payment by the borrower/ issuer
Eligible Beneficiary	<ul style="list-style-type: none"> • ADB Developing Member Countries (DMC) • Financial institution and capital market (e.g. banking, leasing, insurance, funds) • Infrastructure (e.g. power, transportation, water supply and waste treatment, and telecommunications) • Issued by private and public sector projects, PPPs, as well as (sub)sovereign entities. 	
Investments Covered	<ul style="list-style-type: none"> • Commercial bank loans • Loans made by shareholders • Loans guaranteed by shareholders or third parties • Capital market debt instruments 	<ul style="list-style-type: none"> • Bonds • Financial leases • Letters of credit • Promissory notes • Bills of exchange
Terms Coverage	<p>Guarantee percentage:</p> <ul style="list-style-type: none"> • Up to 40% of project cost or \$400 million • Not applicable if ADB is protected with counter-guarantee given by sovereign <p>Tenor:</p> <ul style="list-style-type: none"> • Match the guaranteed instrument <p>Denominated:</p> <ul style="list-style-type: none"> • Local currency (DMCs) • Foreign currency <p>Sector:</p> <ul style="list-style-type: none"> • Financial services • Power • Infrastructure <p>Credit rating: AAA</p>	<p>Guarantee percentage up to :</p> <ul style="list-style-type: none"> • 25% of project cost (project finance) • 25% of total assets (corporate transactions) • 50% of net worth (bank transactions) • \$250 million • Not applicable if ADB is protected with counter-indemnity given by sovereign <p>Tenor:</p> <ul style="list-style-type: none"> • Up to 15 yrs <p>Denominated:</p> <ul style="list-style-type: none"> • Local currency (DMCs) • Foreign currency <p>Sector:</p> <ul style="list-style-type: none"> • Financial services • Power • Infrastructure <p>Credit rating: AAA</p>

Guarantee providers

International Finance Corporation (IFC): Partial Credit Guarantee		French Development Agency (AFD): Risk Sharing Mechanism	
Risks Coverage	<ul style="list-style-type: none">• Credit enhancement for bonds and loans• Transfer & convertibility risk (cross border)	<ul style="list-style-type: none">• All risks of default and unpaid interest capped to one year	
Eligible Beneficiary	<ul style="list-style-type: none">• Financial institutions• Microfinance company• Developers• Sovereign/sub-sovereign entities	<ul style="list-style-type: none">• SMEs, individual entrepreneur• Financial institutions• Small IPPs	
Investments Covered	<ul style="list-style-type: none">• Loan• Bonds• Subordinated bonds• Capital market securitizations	<ul style="list-style-type: none">• Loans• Credit portfolio• Guarantees	
Terms Coverage	<p>Guarantee percentage:</p> <ul style="list-style-type: none">• Up to 100% <p>Denominated:</p> <ul style="list-style-type: none">• Local currency• Foreign currency (cross-border) <p>Sector:</p> <ul style="list-style-type: none">• Multi-sector	<p>Guarantee covered:</p> <ul style="list-style-type: none">• Max 50% (up to 75% for MFIs) <p>Tenor:</p> <ul style="list-style-type: none">• Up to 12 years <p>Denominated:</p> <ul style="list-style-type: none">• EUR, USD, Local currency <p>Sector:</p> <ul style="list-style-type: none">• All, except real estate, tobacco, alcohol and weapons <p>Fees</p> <ul style="list-style-type: none">• An eligibility fee of 10 KEUR per annum• An annual fee of 1.7% (paid twice a year) on the outstanding guaranteed amount	

Guarantee providers

Japan Bank for International Cooperation (JBIC)

	Overseas Syndicated Loan Guarantee	Public Sector Bonds Guarantee
Risks Coverage	<ul style="list-style-type: none"> Currency conversion and transfer risks 	<ul style="list-style-type: none"> Country risks
Eligible Beneficiary	<ul style="list-style-type: none"> Japanese private financial institutions to provide financing for developing countries 	
Investments Covered	<ul style="list-style-type: none"> Loans 	<ul style="list-style-type: none"> Public bonds
Terms Coverage	Tenor: <ul style="list-style-type: none"> Medium and long-term 	

Guarantee providers

United States Agency for International Development (USAID): Development Credit Authority

Risks Coverage	<ul style="list-style-type: none"> Non-payment by the borrower/ issuer
Guarantee Products	<ul style="list-style-type: none"> Loan guarantee Loan portfolio guarantee Portable guarantee (required Portable Guarantee Commitment Agreement with the lenders) Bond guarantee
Eligible Beneficiary	<ul style="list-style-type: none"> Financial institutions Micro, small, medium-sized enterprises Corporate or sub-sovereign bond issuer
Investments Covered	<ul style="list-style-type: none"> Non-sovereign debt capital Bonds Credit portfolio
Terms Coverage	<div> <div> Guarantee covered: <ul style="list-style-type: none"> Up to 50% pari passu guarantee on loan principle (not fees or interest) </div> <div> Denominated: <ul style="list-style-type: none"> Local/foreign currency </div> </div> <div> Sector: <ul style="list-style-type: none"> Agriculture, Energy, Environment, Education, Small business, Health, Infrastructure, Manufacturing, Water, Multi-sector </div> <div> Tenor: <ul style="list-style-type: none"> Up to 20 years </div>
Fees	<ul style="list-style-type: none"> Origination fee: up-front fee based on the facility size Utilization fee: semi-annual fee based on the value of loans placed under guarantee

Indonesia Infrastructure Guarantee Fund (IIGF)

<ul style="list-style-type: none"> Permit license and approval Delay or failure in financial close 	<ul style="list-style-type: none"> Regulatory risk Public sector technical performance
<ul style="list-style-type: none"> Developers (PPPs) Multi-sector 	
<ul style="list-style-type: none"> Equity Loans 	
<div> <div>Sector:</div> <ul style="list-style-type: none"> Infrastructure (toll road, urban) Power Energy conservation Education Health </div>	<ul style="list-style-type: none"> Sports and arts Transportation Tourism Waste management Water resources and irrigation

The background of the slide is a high-angle, isometric photograph of a solar farm. A worker wearing a hard hat and safety vest is visible in the center, using a long-handled tool to work on a row of solar panels. The panels are arranged in neat, parallel rows that stretch across the landscape. The entire image is overlaid with a semi-transparent red filter.

Appendix

Case studies

Thai Biogas Energy Company – Credit Guarantee

Transaction Overview

Date: April 2014

Country: Thailand

Guarantee Name: Credit guarantee on long term senior loan

Guarantor: GuarantCo

Sector: Renewable energy/wastewater treatment

Beneficiaries: ICBC Thailand

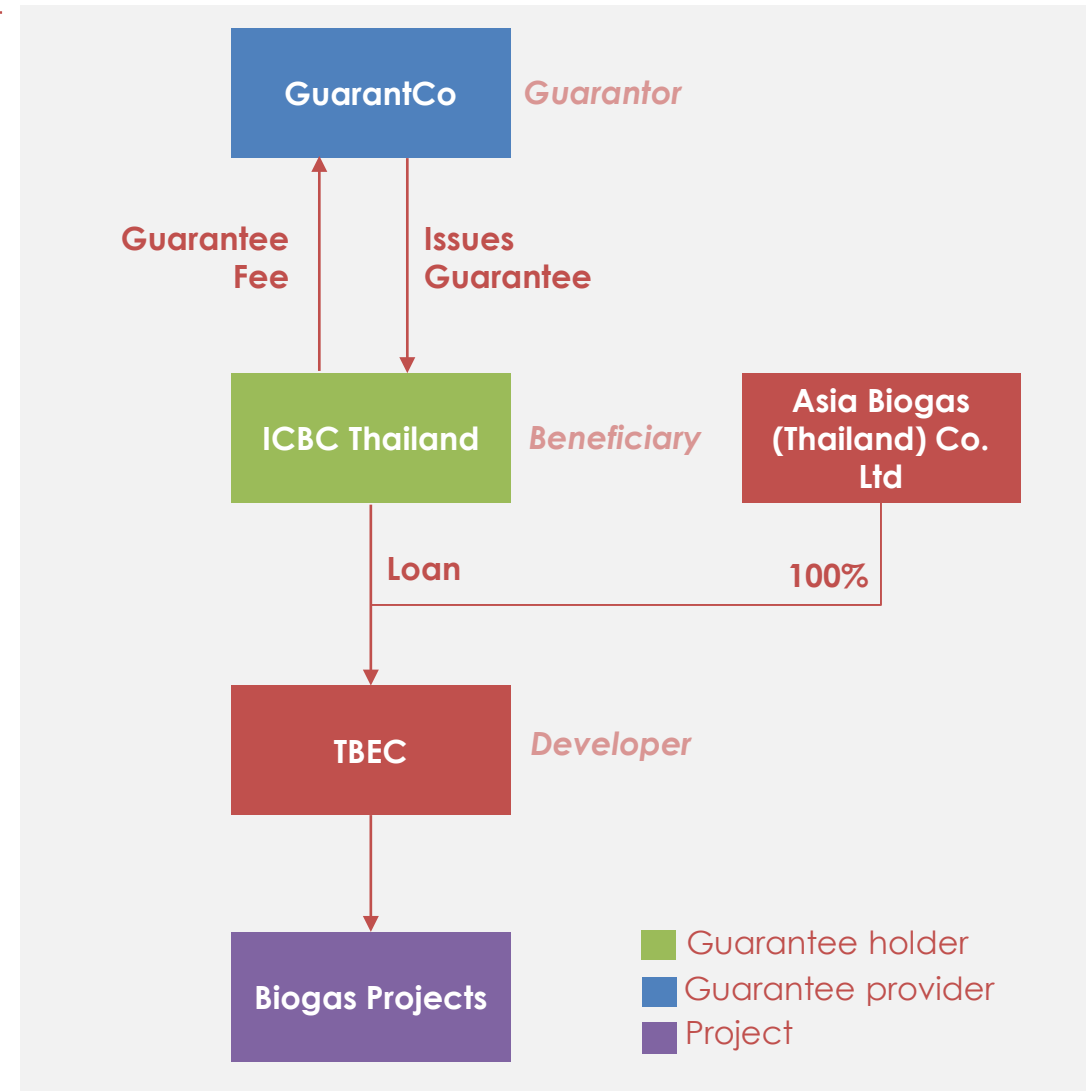
Project : Thai Biogas Energy Company ("TBEC") biogas plants

Guaranteed Amount: THB 425 mn (USD 13.5 mn)

Transaction Size: THB 425 mn (USD 13.5 mn)

Outcome:

TBEC builds and operates two biogas plants in south Thailand. TBEC's plants reduce local air and water pollution, provide renewable energy & electricity, and help in mitigating climate change through methane capture.



Leyte Luzon Geothermal – Partial Credit Guarantee

Transaction Overview

Date: June 1994

Country: Philippines

Guarantee Name: Partial Credit Guarantee

Guarantor: World Bank (IBRD)

Sector: Renewable energy

Beneficiaries: National Power Corporation ("NPC")'s bondholders

Project : Leyten-Luzon Geothermal Power Plant

Project Implementers:

National Power Corporation ("NPC")
Philippine National Oil Company ("PNOC")
Electricity Development Corporation ("EDC")

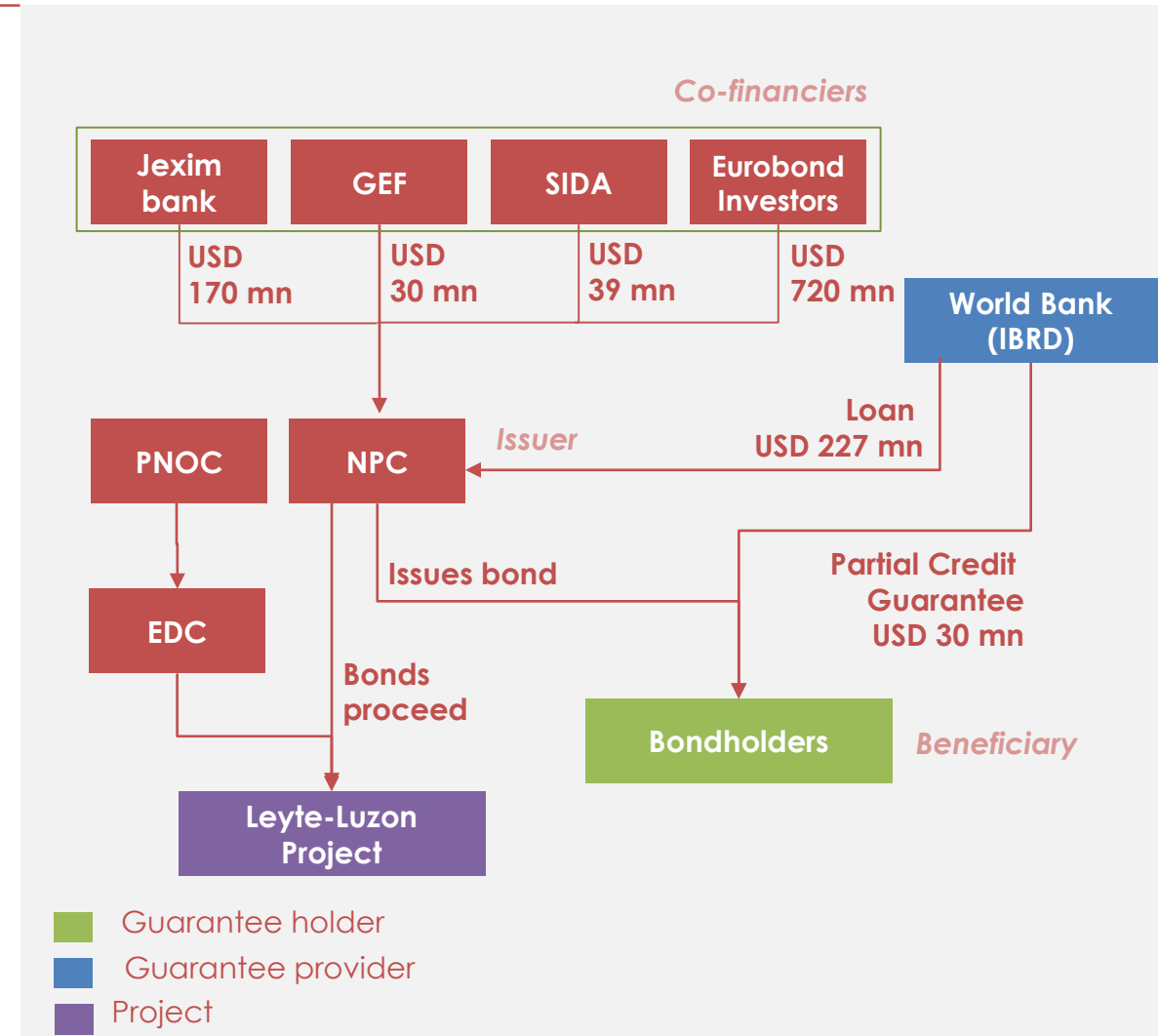
Guaranteed Amount: USD 30 million

Bonds Size: USD 1.3 billion

Bonds Tenor: 15 year

Outcome:

NPC was able to get a bond with a 15 year maturity (previous attained by Philippine sovereign entity is 10 years). The 15 year maturity was obtained at the favorable pricing of 2.5% over the yield of US treasury of the same maturity.



AP Renewables Inc. – Partial Credit Guarantee

Transaction Overview

Date: Mar 2016

Country: Philippines

Guarantee Name: Partially guaranteed bonds, unconditional and irrevocable guarantee of non-payment

Guarantor: Asian Development Bank (“ADB”) with risk sharing from Credit Guarantee & Investment Facility (“CGIF”)

Sector: Renewable energy

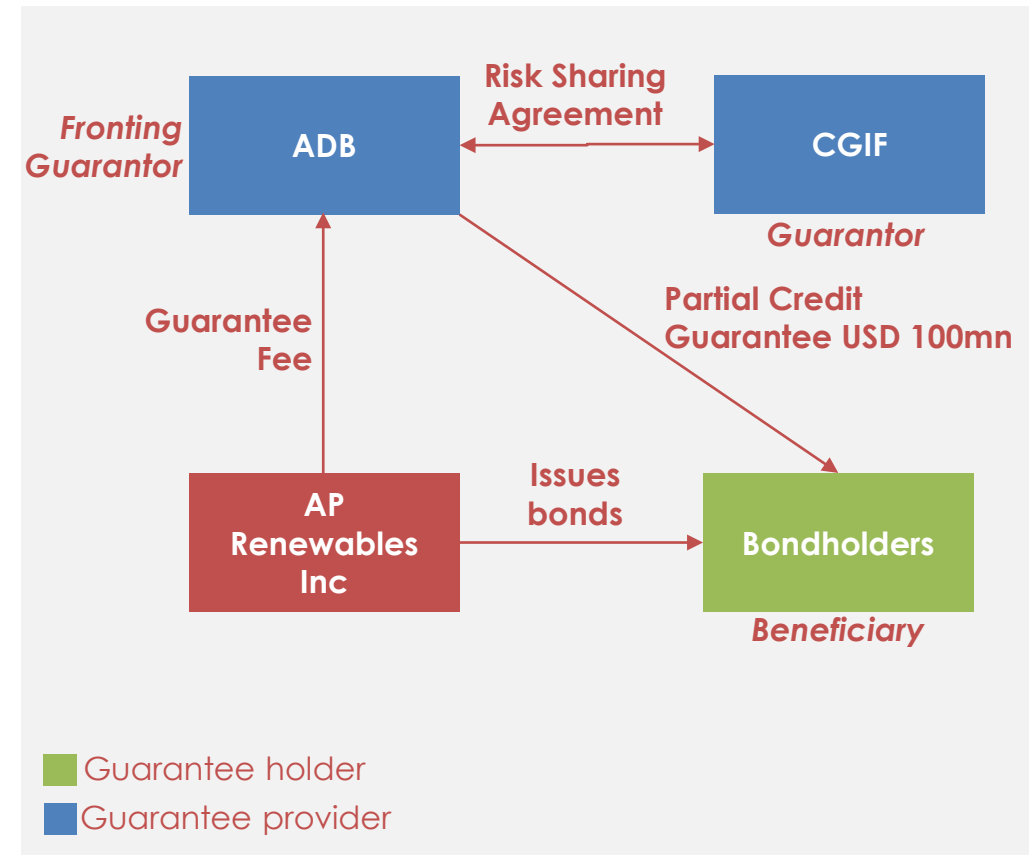
Beneficiaries: AP Renewables Inc.’s Bondholders

CGIF Guaranteed Amount: PHP 4.7 bn (USD 100 mn)

Transaction Size: PHP 10.7 bn (USD 224 mn)

Outcome:

Enhancement on the ADB guarantee by CGIF’s first loss risk-sharing by (1) increased size amount, (2) lengthened tenor, (3) improved overall deal economics.



VNCEO Hoi Xuan Hydropwer – Non-honouring of Sovereign Financial Obligations

Transaction Overview

Date: December 2015

Country: Vietnam

Guarantee Name: Non-honouring of Sovereign Financial Obligations

Guarantor: Multilateral Investment Guarantee Agency (“MIGA”)

Sector: Renewable Energy

Beneficiaries:

Goldman Sachs
Bank of Tokyo (“BTMU”)

Project Developer: VNECO Hoi Xuan Investment and Electricity Construction Joint Stock Company (“Joint Company”)

MIGA Guaranteed Amount: USD 239.7 mn

Loan Tenor: up to 15 years

Outcome:

- Construction and operation of a 102 MW Hoi Xuan hydropower plant on the Ma River

