ASEAN Energy Workshop - Key Policy Considerations for Bankable Energy Projects

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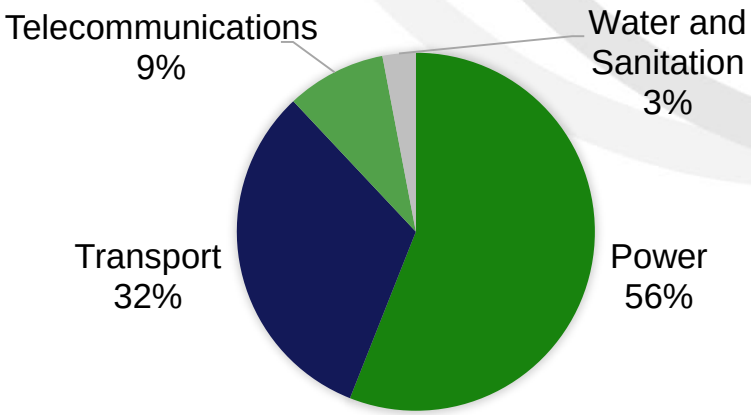
Making Infrastructure Happen

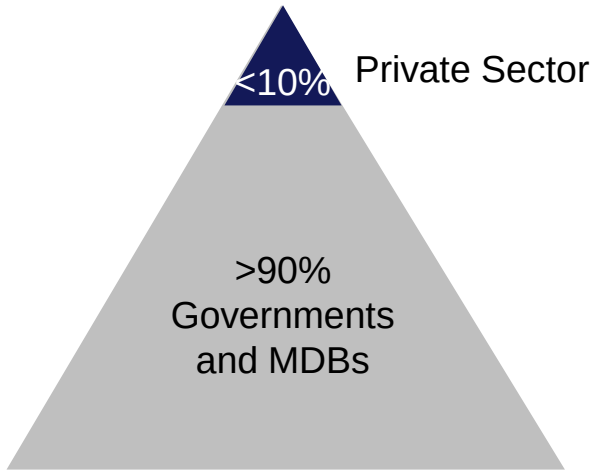
The challenge of infrastructure in ASIA is finding bankable and investment-ready projects

1 Large infrastructure demand gap to fill

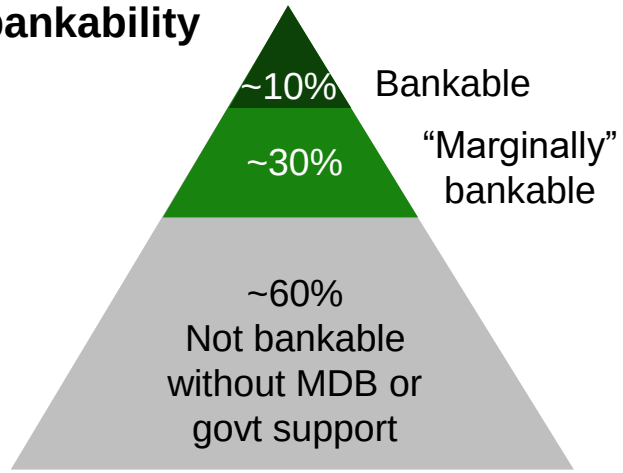
2 Demand segments in Asia in which Singapore has best-in-class solutions



3 Counterparts in Asian infrastructure are mostly government-led

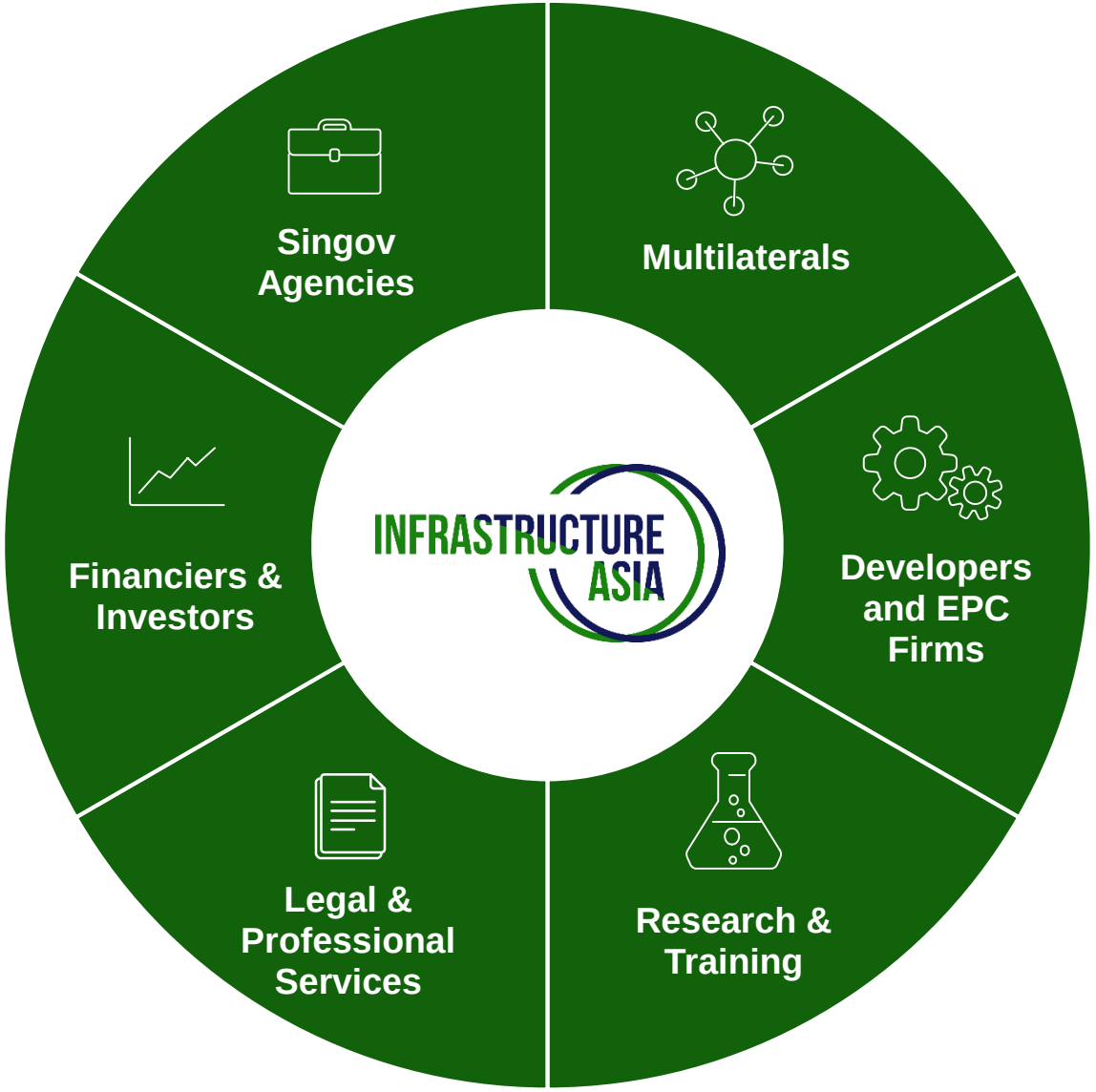


4 A public service from Singapore (seen as neutral, trustworthy and international) can assist with enabling bankability



Sources for #1-3: Meeting Asia's Infrastructure Needs, 2017; Source for #4: Closing the Financing Gap, Marsh & McLennan, 2017

Infrastructure Asia works with Infrastructure ecosystem in Sinapore to support infrastructure development in Asia



Singapore's Strengths

1. Wide ranging expertise across the infrastructure value chain
2. Deep understanding of the region's opportunities and challenges
3. Extensive operational track records in the region

Led by

Enterprise Singapore

MAS Monetary Authority of Singapore

Introducing the Panel

Minn Naing Oo	Gary Swinfield	Lim Wee Seng	Sharad Somani	Lawrence Wu
Managing Director of Allen & Gledhill (Myanmar)	Regional Director - Construction, Power & Infrastructure, Asia Commercial Risk Solutions	Global Head, Project Finance	Partner & Head of Infrastructure Advisory and ASPAC Head for Power & Utilities	President & Executive Director

Energy & Renewable goals can only be met through international financing

1

ASEAN's total energy demand is projected to rise by 65% from 2016 to 2040. **US$120B per year** till 2040 is needed to meet this demand. Energy investment in ASEAN has averaged only **US$50B per year** since 2000

2

US$18B per year till 2040 is needed for natural gas production and related infrastructure, including **US$4B per year** for pipelines and **US$1B per year** for LNG facilities.

3

ASEAN has targeted to increase renewable energy to 23% of its total energy mix by 2025. **US$27B per year** total is needed to meet this target. Additional **US$9B per year** will be needed on top of existing government plans.

#1 and #2: IEA (2017). Southeast Asia Energy Outlook 2017.
#3: IRENA & ACE (2016). Renewable Energy Outlook for ASEAN: a REmap Analysis.

Key elements of bankable projects

Key elements of bankable energy projects

Good Risk Allocation in Project Documents (e.g. PPA)

Conducive Financial Arrangements

Favorable Operation Environment

Availability of Legal Recourse

Good Risk Allocation in Power Purchase Agreements

- Tariffs
- Force Majeure
- Change in Law
- Assignment
- Change Modification
- Transmission & Interconnection Risk
- Curtailment
- Termination

Good Risk Allocation in Power Purchase Agreements

	FEATURES OF A BANKABLE PPA
TARIFFS	For Infrastructure project with sole off-taker of output, revenue certainty to allow for capital repayment is key to lenders and developers Commonly accepted tariff structure: • Availability payment + output payment • Output payment with minimum offtake (take or pay) Renewables type of project with intermittency in resource availability is typically structured on “must run” / only dispatch pure output based structure. Consider- indexation mechanism for forex, inflation rate, underlying fuel price, factors beyond the control of private sector, overall can result in reduction in risk premium placed by private sector.

Good Risk Allocation in Power Purchase Agreements

	FEATURES OF A BANKABLE PPA
FORCE MAJUERE (FM)	Robust FM clause allowing IPP (Independent Power Plant) to be excused from performance during an FM event. Not often the case in renewables.
CHANGE IN LAW	This risk should not be taken by the off-taker as it is out of the control of the private sector.
ASSIGNMENT	Permits collateral assignment
CHANGE MODIFICATION	Flexibility need to be introduced to accommodate step change in technology, demand / off-taker requirements, upgrades and changes in environment / other regulations
TRANSMISSION & INTERCONNECTION RISK	The more significant the risks (due to terrain, distance etc.) the more risk the off-taker should bear.

Good Risk Allocation in Power Purchase Agreements

	FEATURES OF A BANKABLE PPA
CURTAILMENT	Currently, the off-taker is not obliged to purchase electricity due to technical curtailment (i.e. fault with grid and transmission lines). Grid constraints and congestions in certain areas in developing countries lead to further concerns around curtailment risks.
TERMINATION	Clearly set out the basis for termination – should be limited to exception circumstances Well defined termination payment mechanism covering off-taker default event (compensation of debt + equity) and sponsor default event (debt only). *In some cases, FM events or termination payment clause does not include government events.

Appropriate Risk Allocation Enhances Bankability

1. Some Good References:
   - World Bank Group's "Guidance on PPP Contractual Provisions 2019 Edition" (https://ppp.worldbank.org/public-private-partnership/library/guidance-ppp-contractual-provisions)
   - Global Infrastructure Hub (G20 initiative) Project Type Risk Allocation Tool (https://ppp-risk.gihub.org/). In energy sector, project types include ***solar PV, hydropower, power transmission*** and ***natural gas distribution***.

2. For GIH Risk Allocation Tool, there is differentiation between developed and emerging market risk allocation, and latter gives reference to at-market positions.

3. As demand-supply changes, these references are expected to be updated regularly to account for emerging issues, including refinancing or change of ownership during the concession term, climate change (or more broadly disruption), contracting authority step-in rights.

Conducive financial arrangements

- Government Guarantees
- Refinancing
- FX Market Depth
- Currency
- Approvals for Offshore Remittance

Conducive financial arrangements

	FEATURES OF A BANKABLE PPA
GOVERNMENT GUARANTEE	Government guarantees are still provided for selected Middle East countries' energy projects, which leads to : 1) Reduced project risk perceived by bidders, 2) Increased project bankability; and 3) Leads to more competitive financing Trend of government gradually phasing out government guarantees e.g. for instance, Indonesia, which is gradually more acceptable to international developers and lenders, the stability of off-taker (PLN) is essential in this.

Conducive financial arrangements

	FEATURES OF A BANKABLE PPA
REFINANCING	Authority's consent and approval for refinancing the norm in bankable long-form PPA/WPA (example of selected Middle East countries, Singapore, Indonesia); Sponsor-initiated refinancing often are as a result of strategic considerations (e.g. refinancing of shareholder loan), favorable change in interest rate environment, large enough quantum relative to transaction cost, and less frequent over the long-term concession period; Refinancing gain sharing (ranging from 50:50, 35:65, 65:35) still the norm and acceptable by private developers; Observation that even in country with lower credit rating, long-term project finance (20Y+) have been acceptable.

Conducive financial arrangements

	FEATURES OF A BANKABLE PPA
FX MARKET DEPTH	Developing depth and eventual bond solutions:- Provides guarantees on local currency denominated bonds by companies in the region. Easier for firms to issue bonds with longer maturities and reduce currency and maturity mismatches.
CURRENCY	Denominated or linked to an exchange rate of the currency of the IPP's debt
APPROVALS FOR OFFSHORE REMITTANCE	No limitation or additional approvals required to transfer funds to an offshore account.

Favourable operation environment

Land use Rights
Risk of acquiring land to be allocated to the government

Incorporation
Ease of incorporation and maintenance of the project company

Approvals
Risk of obtaining approvals to be allocated to the government

Investors assistance
Creation of one-stop centres to provide assistance to investors

Availability of legal recourse

	FEATURES OF A BANKABLE PPA
DISPUTE & ARBITRATION	Government typically favors arbitration rule/venue to be at home country – however, from observation of precedent transactions, international arbitration rule (ICC) at a neutral country is often a key requirement by private developers The introduction of independent expert / third-party expert appointed should the Parties not be able to resolve Disputes.

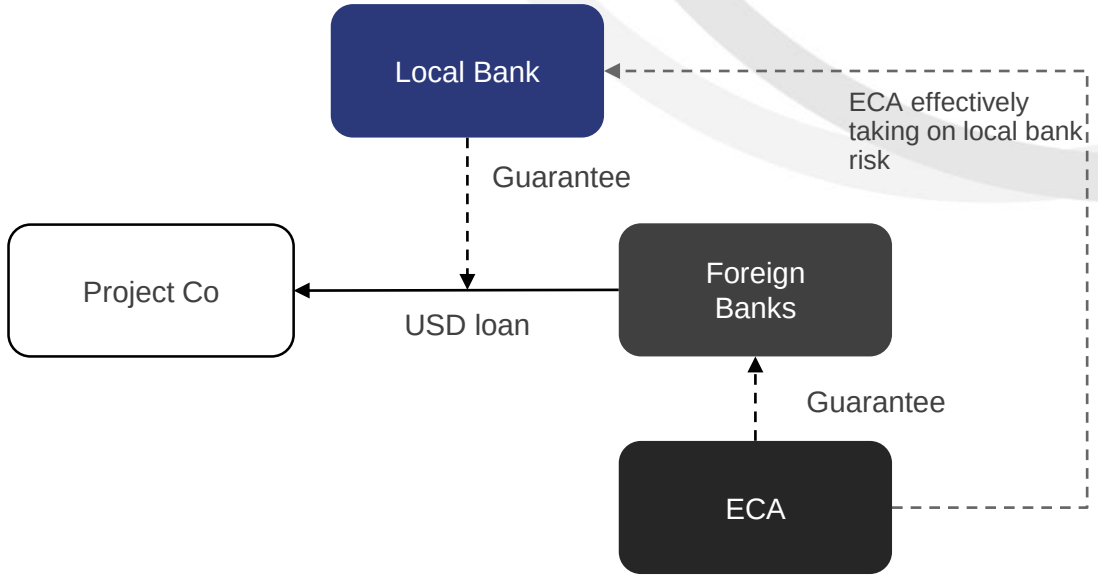
Availability of legal recourses

Solutions to improve the bankability of energy projects

Case Study 1: Building an ecosystem of credible players

Option 1: ECA Cover with Local Bank Guarantee Structure

- **PPA Termination**: Guarantees on outstanding principal and interest provided by a local bank / with ECA cover.
- **Curtailment**: Guarantees provided by local bank / with ECA cover against specific risks on curtailment.
- **Government FM**: Similar mitigation as PPA Termination and Curtailment envisioned.
- **Tariff Renegotiation**: Guarantees on outstanding principal and interest provided by local bank / with ECA cover.



Features / Comments

- Foreign banks extend a USD loan to Project Co.
- Local banks provide an on-demand guarantee covering principal, interest and legal fees under the USD loan agreement.
- ECA then provides a guarantee over the local bank guarantee, essentially taking on local bank risk while foreign banks take ECA risk.
- ECA cover amount is dependent on value of export content and tenor will be predicated on its local bank limits.

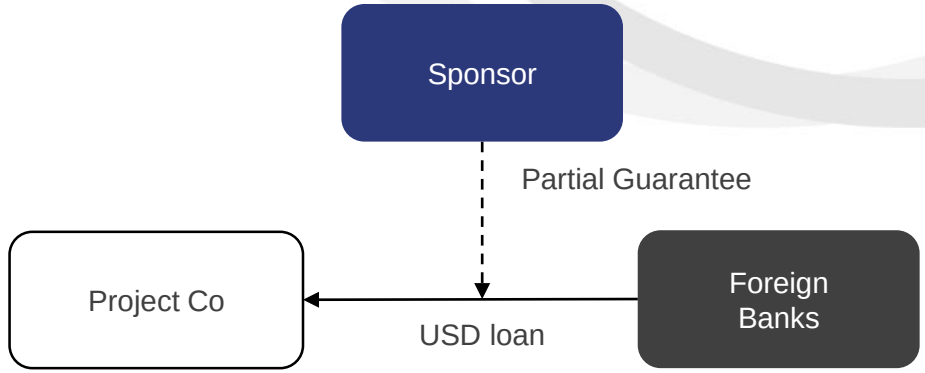
Pros / Cons

- ✓ **Liquidity**: Higher liquidity from larger pool of foreign banks willing to take on ECA risk.
- ✓ **Pricing**: Higher liquidity and lower USD loan margin may help to drive down overall pricing.
- X **Execution**: Higher complexity given multiple parties and additional requirements.
- X **Size**: ECA cover amount limited by value of export content.
- X **Tenor**: ECA cover predicated on ECA's tenor limits for local banks.

Case Study 1: Building an ecosystem of credible players

Option 2: Sponsor Support – Limited Recourse Structure

- **PPA Termination**: Sponsor Guarantees covering outstanding debt. In events of prolonged suspension of the PPA and no satisfactory mitigation plan in place or termination of the PPA, these will be prepayment events to be covered by Sponsor Guarantees.
- **Curtailment**: (i) Review event triggered for Sponsor to provide mitigation plan during prolonged curtailment, (ii) Sponsor support to cover debt service in event of revenue impact or mandatory prepayment based on debt resizing due to curtailment beyond a certain level for a prolonged period.
- **Government FM**: Similar mitigation as PPA Termination and Curtailment envisioned.
- **Tariff Renegotiation**: If the offtaker unilaterally reduces the applicable FIT, there should be Sponsor support to cover debt service or mandatory prepayment based on debt resizing.



Features / Comments

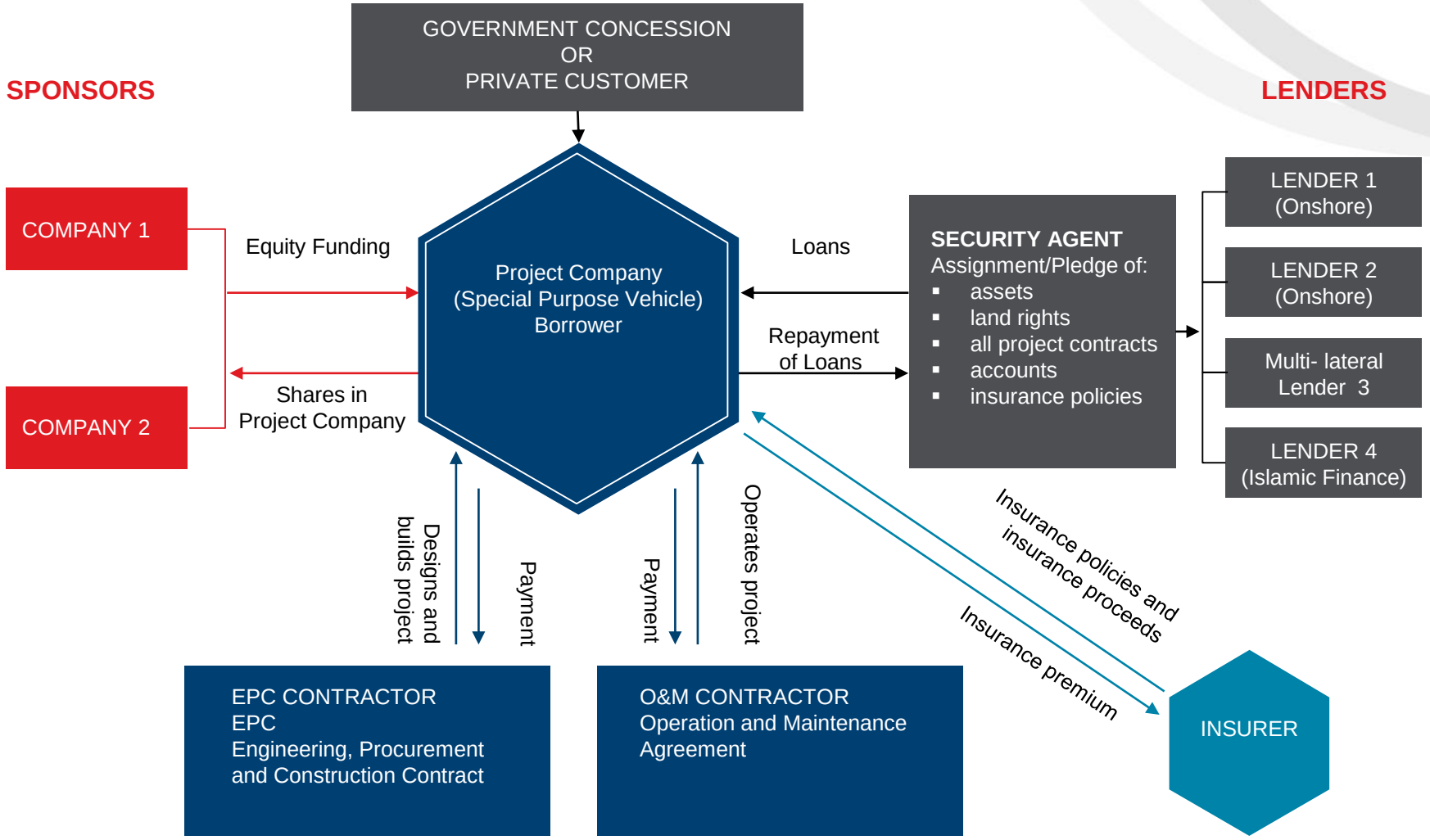
- Foreign banks extend a USD loan to Project Co.
- Sponsor provides a partial guarantee covering principal, interest and expenses under the USD loan agreement for completion, PPA and some offtaker related risks[1].
- Partial risk guarantee will cover Project achieving COD, as well as events listed in slide 3 such as curtailment, prolonged force majeure, tariff review and PPA termination.
- Sponsor needs to be an entity acceptable by foreign banks.

Pros / Cons

- ✓ **Pricing**: Sponsor support may help to drive down overall pricing.
- ✓ **Longer-term**: Currently being executed in market – suitable for investment grade strategic sponsors who take a long-term view of the jurisdiction.
- X **Risk exposure**: Limited recourse structure increases overall risk exposure to Sponsors.
- X **Applicability**: Not suitable for non-investment grade sponsors or fund type sponsors as the former is not acceptable as a guarantor while the latter cannot provide such support.
- X **Size**: The larger the project, the higher the scrutiny on the ability of sponsors to take the risks covered over the long term.

Case Study 2: Demand aggregation for insurance

Typical Structure for a Project Finance



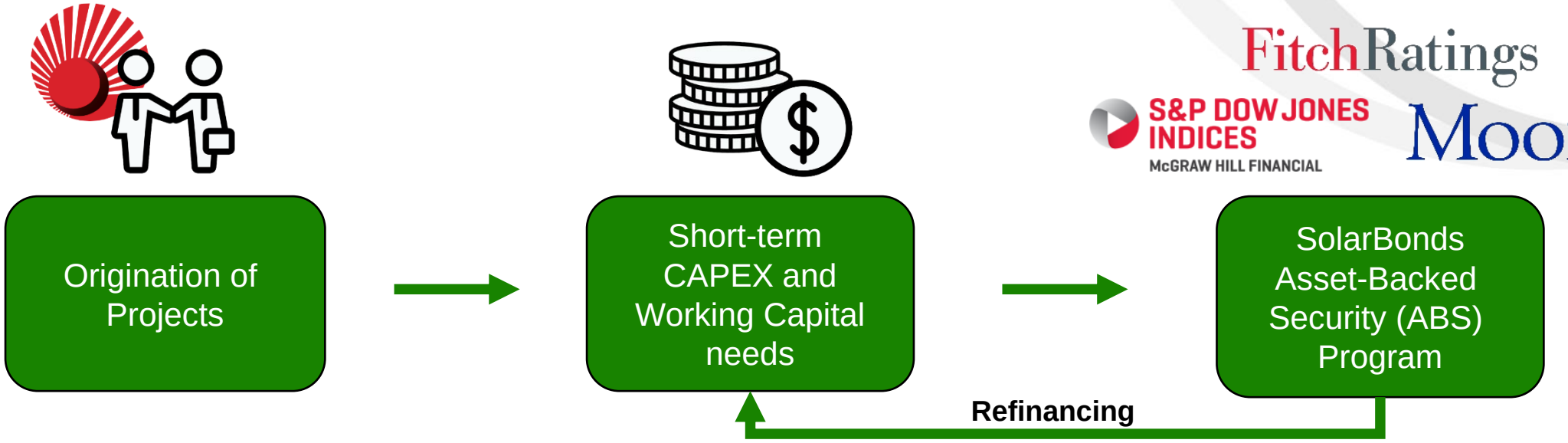
Case Study 2: Demand aggregation for insurance

- As an example – Terrorism risk
  - Off-taker passes risk to IPP / PPP Company
  - Lender requires risk to be insured by IPP / PPP Company
  - IPP/PPP Company buys insurance on a project-by-project basis

- Alternatives
  - Off-taker or Lender/s accepts more or all of risk within the PPA/IA/BOT, etc. and insures the risks
  - Allocate deductible to each IPP / PPP Company

- Insurance demand aggregation
  - Project-by-Project insurance raises the overall cost
  - A single purchase across all projects would reduce costs and tariffs

Case Study 3: Demand aggregation for financing (Bonds) – Solar Project



Visible and Growing Pipeline

Sunseap has a pipeline of both commercial and industrial projects in Singapore exceeding 120 MWp,

Pipeline includes large and listed corporates

Sunseap has proven experience and a track record in executing large-scale projects

Tailor-made Financial Warehouse

Warehouse facility will be used to finance the initial construction cost of the high quality projects

The solution is envisioned to be a short-term revolving credit facility for the extent of the construction

The facility will then be refinanced by a take-out via the ABS program for future projects

Asia's Pioneer Solar ABS Program

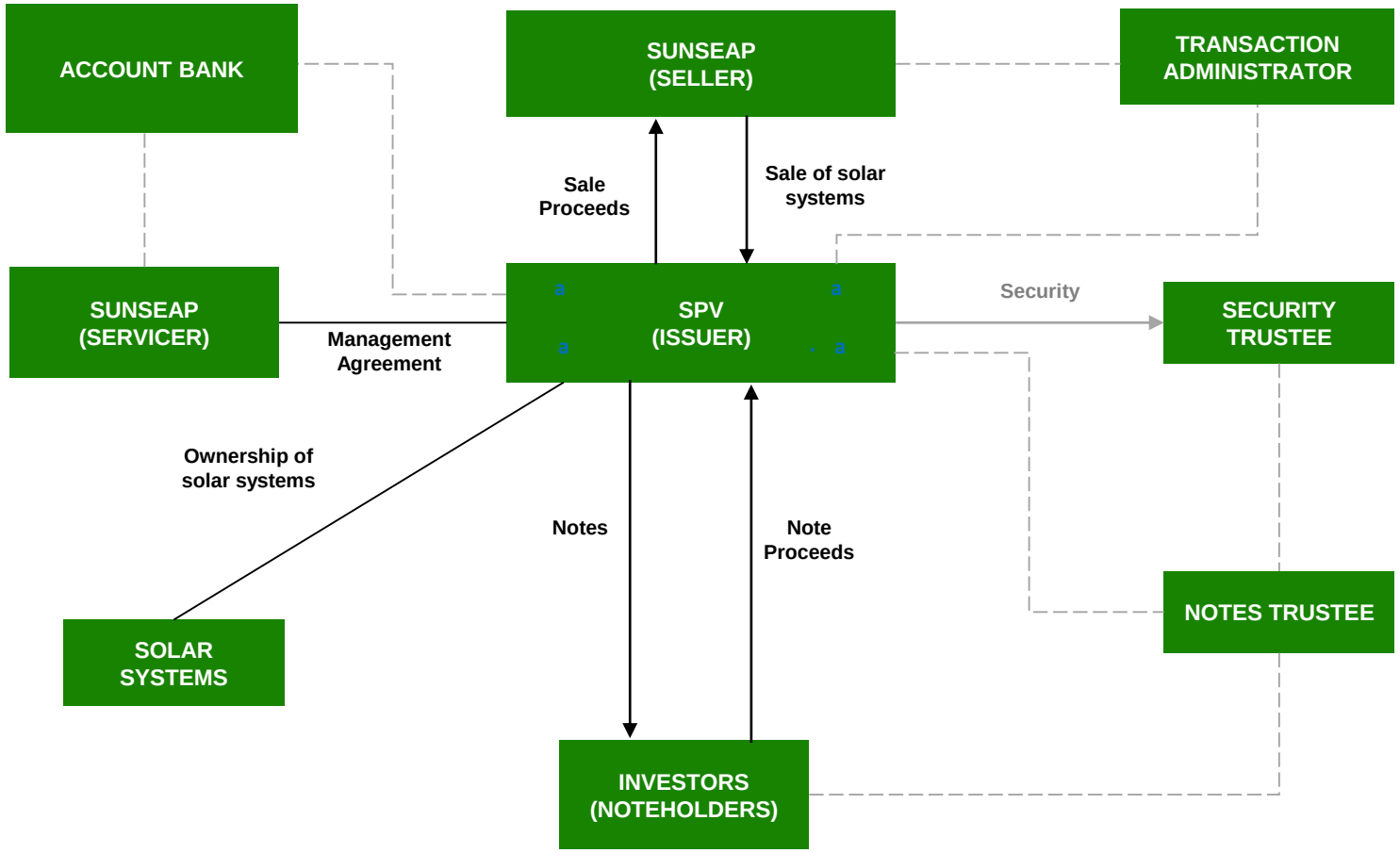
Sunseap's ABS program is expected to be Asia's first Solar ABS when launched

The issuance (~S$45-50m) will be rated by the credit agencies, with an envisioned Investment Grade rating

The structure of the ABS will mimic the structure of the Financial Warehouse

Case Study 3: Demand aggregation for financing (Bonds) – Solar Project

Transaction Structure



Transaction Description

1. A newly incorporated orphan Special Purpose Vehicle (“SPV”) set up in Singapore as a bankruptcy remote structure from the originator, as the issuance vehicle. The SPV owns the right to lease revenues from the managed portfolio and any residual cash flows from the sale of solar panel systems.

2. The Originator enters into a Master Purchase Agreement with the SPV for the assignment of the solar leases and PPA receivables.

3. The SPV issues ABS notes to investors. The note proceeds will be used to fund the purchase of the Managed Systems under a Master Purchase Agreement from the Originator.

4. The notes are secured by and payable solely from the cash flows generated by a portfolio of solar lease agreements and PPA receivables to commercial and residential properties. The notes will represent obligations solely of the Issuer and will not hold recourse to the Originator.

Case Study 3: Demand aggregation for financing (Green Loan) – Solar Project

Innovative structure for a limited-recourse portfolio financing of multiple solar rooftop systems of different sizes and located in different locations in Singapore.

This is the **first green loan in ASEAN that is compliant with LMA/APLMA Green Loan Principles** for a portfolio of rooftop solar projects.

BACKGROUND

SUNSEAP will develop and own approx. 50MW portfolio of rooftop solar PV assets projects with customers in Singapore under long-term Power Purchase Agreements ("PPA") at agreed tariffs.

ING acted as Sole Mandated Lead Arranger and Original Lender, Green Structuring Advisor, Account Bank, Facility Agent and Security Trustee

TRANSACTION

S$50 mil Senior Loan facility, structured as a 5-year bilateral mini-perm loan.

Debt is sized on individual project basis, based on customers credit profile.

Pre-agreed specific conditions and experience required for EPC, O&M, and supply of solar panels and inverters

FRAMEWORK

Under this financing framework, Sunseap and its subsidiaries will be able to raise green financing instruments (e.g green loans, green bonds or other debt instruments) to finance or refinance its future green projects

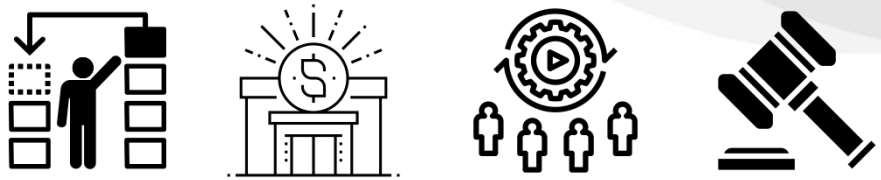
Eligible green projects are:

- renewable energy
- energy efficiency
- green roof systems

SUMMARY

Governments can promote certainty in projects by considering the key elements of bankakble PPAs in every project:-

- Good risk allocation,
- Conducive financial arrangements
- Favorable operation environment
- Availability to legal recourse



Certainty reduces the risk and thus the “premium pricing” for the project to investors.

ECA or sponsor support can help reduce the risk of the project for foreign banks and increase the liquidity in the ecosystem.

Un-optimised risk allocation increases project costs; some risks can be aggregated and be more cost-effectively covered by insurance

Supporting or implementing demand aggregation for renewables can help smaller projects achieve the scale needed to be bankable

Thank You