Financing Renewable Energy ("RE") Project

Jakarta, 1 October 2014

PT Sarana Multi Infrastruktur (Persero)
PT Sarana Multi Infrastruktur (Persero) (“SMI”) was established on February 26, 2009 with a purpose to become a catalyst for accelerating infrastructure development in Indonesia. SMI is 100% owned by Government of Indonesia.

“A leading catalyst in the acceleration of the National Infrastructure Development Program”

### Commercial Financing
- Promoter Funding
- Take Out Financing
- Working Capital Loan
- Senior Term Loan
- Subordinated Loan
- Mezzanine
- Equity
- Securitization
- Bridge Loan

### Advisory Services
- Financial Advisory Services
- Investment Advisory Services
- Training & Capacity Building

### PPP Project Preparation Services
- Project Development Facility (PDF)
- Advisory to Contracting/ Tendering Agencies
Financing RE Projects

**Corporate Finance**

- Focus on corporate financial conditions and past performance
- Assess liquidation value of corporate assets
- Corporate risk and project risk are interrelated

**Project Finance**

- Focus on specific projects and cashflows
- Assess project cashflows
- Companies are independent from project risks

**Debt Capacity**

1. Depends on financial conditions of borrower
2. $\text{Debt Capacity}^{(1)} = \text{Cashflow Available for Debt Service}^{(2)}$ (After taking the fluctuation of the project revenue and expenditure into consideration) $\times$ Loan Tenor
1. **Corporate Finance**  
*Lender relies on cashflows from all corporate activities*

2. **Project Finance**  
*Lender relies on cashflows from the specific project only (Project 3)*

Project Finance is relying on the project’s cashflow as the principal repayment source.
## Project Finance lenders’ key considerations

### Key consideratons

1. Optimal sharing of risks – principle is that risks should be allocated to the party best suited to manage or minimize it.

2. Having a conducive regulatory environment.

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### Key risks across project life

#### Construction Phase
- Construction risk
- Financial risk

#### Start Up
- Refinancing risk
- Delay
- Traffic (ramp up)

#### Operation Phase
- Service quality standard

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#### Construction Phase
- Construction Delay & Cost Overrun
- Constructor default and insolvency
- Government approvals and land acquisitions

#### Operation Phase
- Demand
- Offtaker risk
- Tariff adjustment and approval
- Contract termination and force majeure
Selected important features for successful Project Financing

1. Strong project sponsors
2. EPC contractor with established track record
3. Stable cashflow
4. Sound project fundamentals
5. Tight financing structures
6. Knowledgeable professional parties
Project Financing – Cashflow Ring Fencing

- Escrow A/c
- Revenue A/c
- Operational A/c
- Debt Service Reserve A/c
- Maintenance Reserve A/c
- Shareholders

Flow Diagram:
- Financing
- Operational Cashflow
- Debt Service
- Fulfillment of Financial Covenants

Detailed: Contractors, O&M Admin, Overheads, etc.
# Challenges and Risks for Implementing RE Project

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Risks Factors</th>
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<tbody>
<tr>
<td>Access to site condition</td>
<td>Land/site contractual risk</td>
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<td>Availability of logistics facility (ports, road availability)</td>
<td>Capital cost over-run: licenses, logistics (transport facilities), construction delay, grid interconnection, etc</td>
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<td>On-site main resources (annual data is not available)</td>
<td>Technology: life-time and efficiency of module and equipment, grid reliability</td>
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<td>Availability of local construction company and material</td>
<td>Financial viability of PLN (long-term PPA)</td>
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<td>Tariff</td>
<td>Disasters: flood, fire, earthquake</td>
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<td>Existing FiT does not attractive enough for the investor to cover risk and gain expected financial return (ROR &gt; 15%)</td>
<td>Capacity and technology transfer: inexperience local investor to build and operate utility scale solar PV plants needs experience partner</td>
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<td>Technology supply rely mainly from offshore</td>
<td>Low learning curve, slow market penetration</td>
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<td>Barrier to entry</td>
<td>Limited access to most efficient technologies</td>
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<tr>
<td>Item</td>
<td>Risk</td>
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<td>-----------------------------------------</td>
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<tr>
<td>Geotechnical</td>
<td>Rocky Soil</td>
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<td></td>
<td>Inadequate soil stability</td>
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<td>Buried obstructions</td>
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<td>Panel/System Performance</td>
<td>Underperformance from design conditions</td>
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<tr>
<td>Panel Warranty Implementation</td>
<td>Panel underperformance or malfunction</td>
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<td>Inverters and Balance of Electrical</td>
<td>Malfunction</td>
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<tr>
<td>Equipment</td>
<td>Underperformance</td>
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<td>Replacement</td>
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<td>Item</td>
<td>Risk</td>
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<tr>
<td>Security</td>
<td>Theft or damage due to lack of security</td>
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<tr>
<td>Revenue Generation/ Credit</td>
<td>Accounting for electricity generated and sold</td>
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<td>Encroachment of Vegetation</td>
<td>Grasses and plants growing on site will shade system and otherwise</td>
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<tr>
<td>and Shading</td>
<td>interfere with system performance</td>
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<tr>
<td>Wind Load on Equipment</td>
<td>Areas with high winds and storms can damage panels and equipment</td>
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<td>Interconnection</td>
<td>Utility-required interconnection</td>
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<td>Transmission and system upgrades become excessively costly or impact</td>
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<td>system performance</td>
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Case study: RE Risk Grade

- Proven Off taker*
- Certain/Regulated Pricing (<10 MW)
- Simple procurement

Off taker: PT Perusahaan Listrik Negara (PLN)

- Sustainability issues
- Solar/Wind/Bio supply have no sufficient database
- Difficult to access location

Supply Sources

- Limited equity
- Limited flexibility of financing

Sponsor

- Included in sponsor
- Convensional management

Operator

- Limited financing products end up on senior loan.

Bank

- Licensing
- Land (Acquisition, or Usage Permission of Forestry)

Government

- Lower middle
- Unproven project management capabilities
- Lack of ability to handle cost overruns case

Contractor

- Small and medium class
- Less comprehensive feasibility study (probability of cost overruns and design changes)

Project Preparation Consultant

- Simple technology
- Low maintenance

Machine Supplier

- Renewable Energy Project

Renewable Energy Project
Case Study: Project DSCR vs Project Reliability

- **Scenario-1: base scenario**
  - Base scenario

- **Scenario-2: with 20% of cost over-run**
  - with 20% of cost over-run
  - Y-1: 0.80, Y-2: 0.82, Y-3: 0.85, Y-4: 0.89, Y-5: 0.93, Y-6: 1.09, Y-7: 1.26, Y-8: 1.33, Y-9: 2.83

- **Scenario-3: with 20% of cost over-run & 17.5% of CF (Year-1)**
  - with 20% of cost over-run & 17.5% of CF (Year-1)
  - Y-1: 0.76, Y-2: 0.77, Y-3: 0.80, Y-4: 0.83, Y-5: 0.87, Y-6: 1.03, Y-7: 1.20, Y-8: 1.26, Y-9: 2.68

- The Debt Service Coverage Ratio (DSCR) is the ratio of cash available for debt servicing to interest, principal and lease payments.
- It is a popular benchmark used in the measurement of an entity's (person or corporation) ability to produce enough cash to cover its debt (including lease) payments. The higher this ratio is, the easier it is to obtain a loan.
- The minimum DSCR, particularly for new sector, for the banking acceptance is about 1.4-1.5 x
## Case Study: Improving Project Bankability

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<th>Indicative Ratio</th>
<th>Remarks</th>
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| **Senior debt** | Financing size = 30% | - Indicator of project’s bankability  
- With mezzanine portion, senior lenders will more secure or comfortable to finance the project  
- Limitation of senior debt portion due to new sector  
- Using cash waterfall mechanism |
| **Mezzanine**   | Financing size = 40% | - Using bullet payment mechanism for principal  
- Reduce cash flow’s burden during senior debt’s tenor  
- Using cash waterfall mechanism |
| **Equity**      | Equity size = 30%  | - Equity sponsor still has room for excess cash  
- Using cash waterfall mechanism |
Case Study: Financing Structure in RE project

Project Finance: Mini-hydro Power Plant

- SMI as a Senior Lender
- PE as a Mezzanine Lender

- SMI and International Institution (Co-financier)
  as a Senior Lender
- On the next stage: PE overseas & SMI as a Mezzanine Lender
THANK YOU FOR YOUR KIND ATTENTION

Disclaimer

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Any complaint in the process of financing irregularities can be submitted to:
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Public complaints on PT SMI service will be kept strictly confidential and handled by a special committee to ensure that complaints are addressed appropriately.