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BUILDING PARTNERSHIPS FOR ENERGY SECURITY

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# INOGATE Workshop

## Energy Efficiency & Renewable Energy Sources




**EE/RES project structures, part I:**

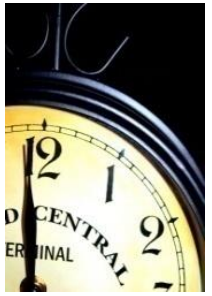
**Risk identification and management, bank guarantees, main evaluation tools & indicators; Introduction to Erste Group**

**Ameria Bank**
**14-18 January 2014, Yerevan, ARMENIA**

Werner Weihs-Raabl, Head of Group Infrastructure (GIF), Erste Bank

# 1. EE& RES Financing & Project Structures

## 2. Internal Workflows

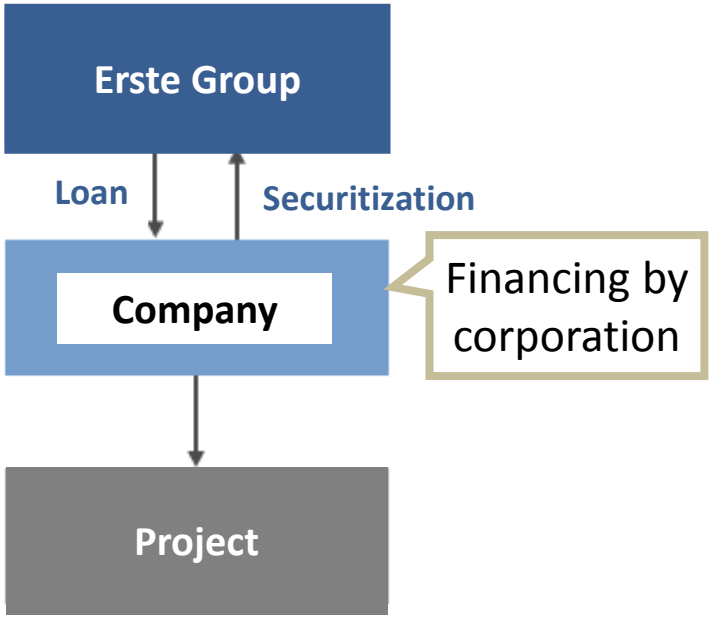


# EE/ RES Financing & Project Structures

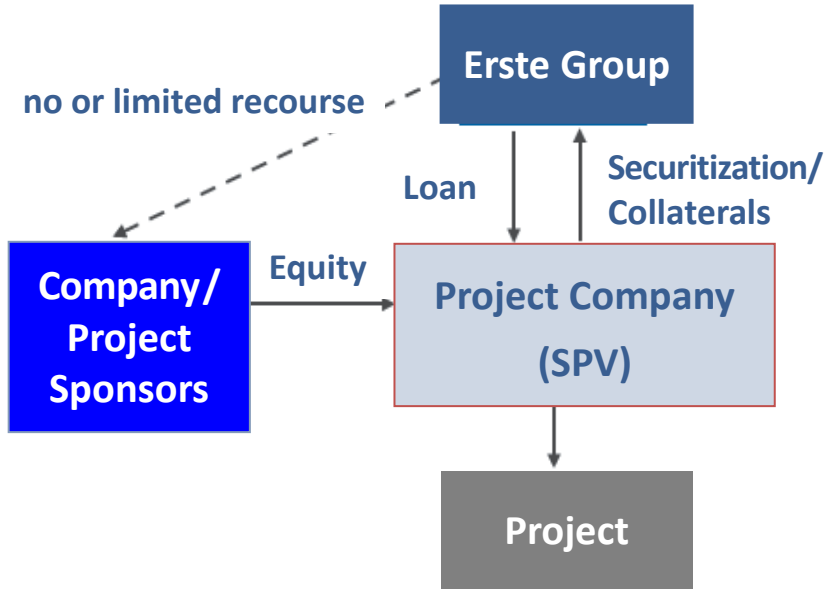
## Corporate Finance vs. Project Finance (Technical Differences)



### Corporate Finance
**Asset based**
**Retrospective**




### Project Finance
**Cash Flow based**
**Forward-looking**



# EE/ RES Financing & Project Structures

## Corporate Finance vs. Project Finance (Technical Differences)

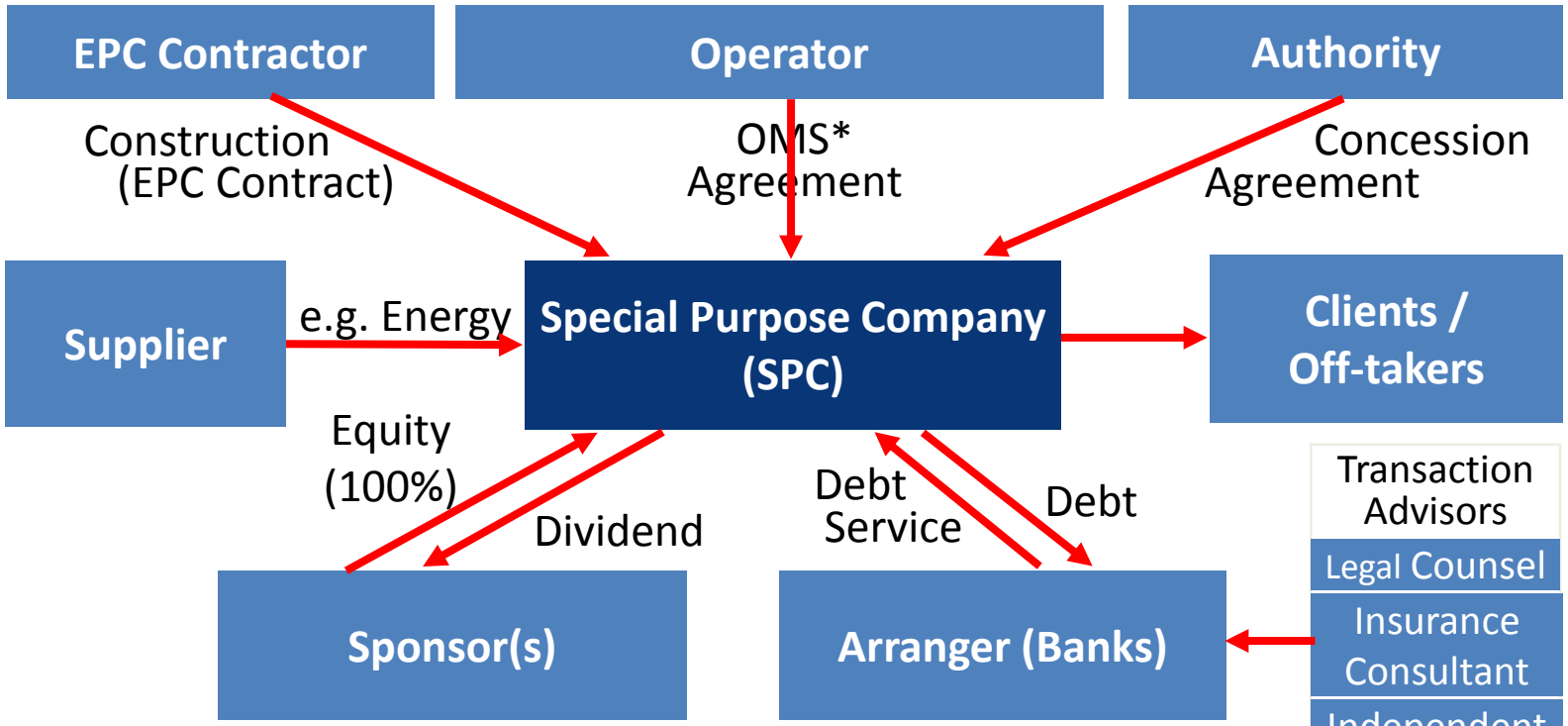


| | Corporate finance | Project finance |
|---|---|---|
| **Definition** | ▪ A company engages in various commercial activities. | ▪ A single purpose capital asset is setup and dissolved once the project is completed. |
| **Cash Flows** | ▪ Usually financed as part of the company's existing balance sheet.<br>▪ The lenders can rely on the cash flows and assets of the sponsor company apart from the project itself.<br>▪ Lenders have a larger pool of cash flows from which to get paid.<br>▪ Cash flows and assets are cross-collateralized. | ▪ The SPV is a legally independent unit<br>▪ The investment is financed with non-recourse or limited debt (off-balance sheet financing).<br>▪ All interest and loan repayments come from the cash flows generated from the project. |
| **Leverage** | ▪ Publicly traded firms have typical leverage ratios of 20% to 30%. | ▪ Project companies have very high leverage ratios, with the majority of debt coming from bank loans. |

# EE/ RES Financing & Project Structures

## Transaction Structure






*Operation, Maintenance & Service

# EE/ RES Financing & Project Structures

## Key Aspects - Phases



## Project Finance Phases

Two phases can be distinguished:

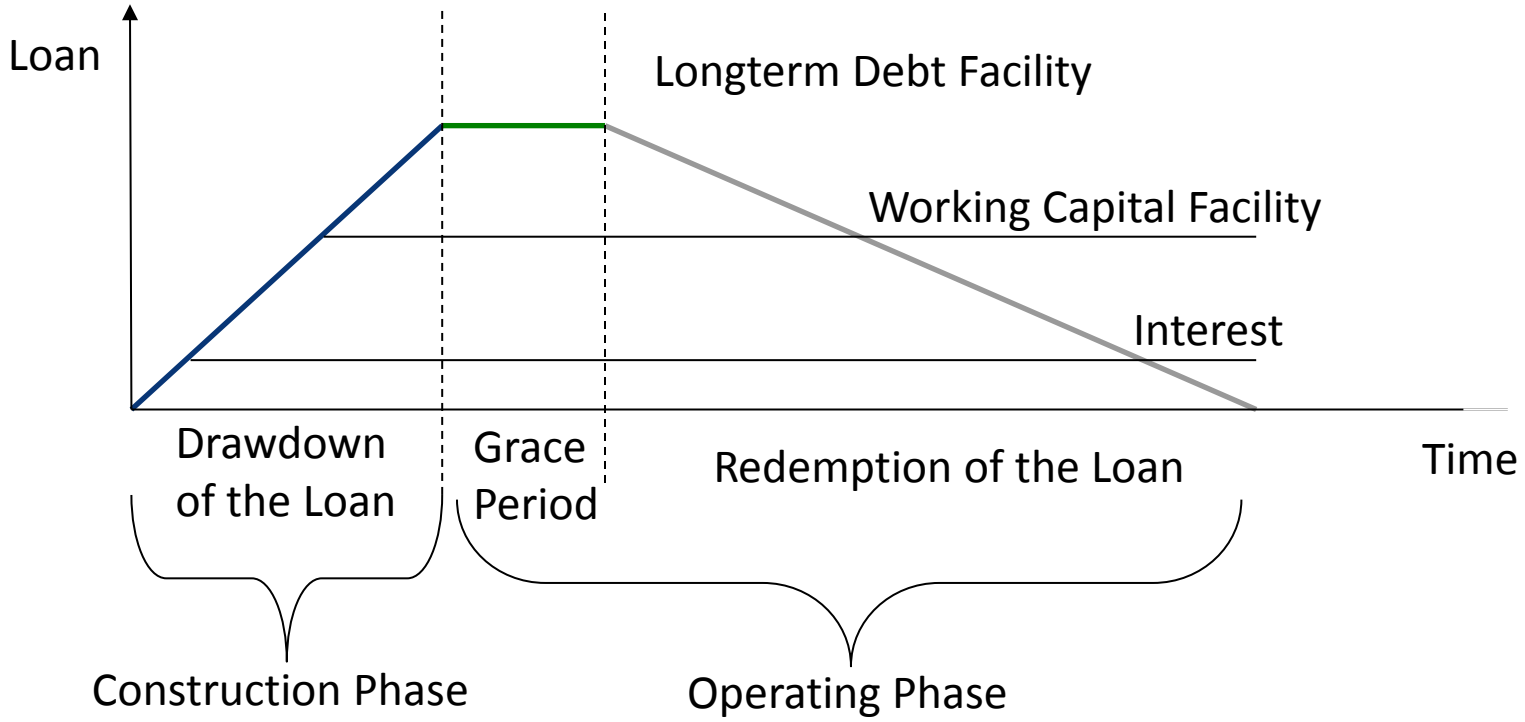
- **Construction phase:**
  - Assets are **designed, engineered** and **constructed.**
  - This phase generates **no cash inflows.**
  - Drawdown of the loan facility is synchronous with the payment schedule of the construction contract (**progress-orientated**).
- **Operating phase:**
  - Project starts business and generates cash flows.
  - Cash flow used for redemption of the loan facility.
- The transition between these two phases is characterised by an **interim**
  - A pilot operation generates first revenues.
  - Plant construction is not finished for lack of turn key delivery or final settlement.

# EE/ RES Financing & Project Structures

## Key Aspects – Debt Profile



### Term Loan Facility: Drawdown and Repayment Profile



# EE/ RES Financing & Project Structures

Key Aspects – Feasibility



## Feasibility Study

- done by a technical or industrial expert
- **independent** of the project parties
- **accepted** by the lender
- goal: to **prove** that the cash flows cover the requirements of the project facility even in a worst case scenario
- an instrument to support the decision making process of
  - the lender
  - the sponsor

# EE/ RES Financing & Project Structures

## Key Aspects – DD



## Due Diligence

- A **comprehensive plausibility check of main project** parameters based on
  - ✓ a business plan
  - ✓ a possible feasibility study
  - ✓ other information and documents required
- identified risk can **lead to**
  - ✓ optimization of risk allocation
  - ✓ introduction of additional risk mitigation strategies
  - ✓ consideration in pricing
- **based on provisions in the mandate agreement**
  - ✓ appropriate term
  - ✓ disclosed information
  - ✓ break up fee
- due diligence extends **beyond the scope of banking know how**; cooperation with experts, lawyers, auditors
- goal of due diligence: **best possible transparency in respect of the risk profile of a project**

# EE/ RES Financing & Project Structures

## Key Aspects – Risks & Mitigants



| Risks | Mitigants |
|---|---|
| **Completion Risk** | Contractual guarantees from general contractor (EPC contract) |
| **Market Risk** | Guarantees, off-take agreements |
| **Resource Risk** | Keeping adequate cushion in assessment. |
| **Operating Risks** | Reliable operator |
| **Technology Risk** | Expert evaluation and retention accounts |
| **Insolvency Risk** | Credit strength of sponsor, competence of management, good corporate governance |
| **Interest Rate Risk** | Swaps and hedging |
| **Currency Risk** | Hedging |
| **Political and Sovereign Risk** | - Export credit guarantees<br>- Contractual sharing of political risk between lenders and external project sponsors<br>- External guarantees or quasi guarantees |

# EE/ RES Financing & Project Structures

Key Aspects – Financial Engineering



## Financial Engineering

**Steps**

1. **definition** of relevant **sources** of finance
2. **analysis** of the identified sources of finance
3. identification and evaluation of **securities**
4. **analysis and evaluation of risk allocation** and narrowing down **the risk adequate pricing** of a project facility
5. adapt **debt finance potential** to the cash flow
6. adapt **redemption structure** according to the annual cash flow
7. analysis of the impact of the finance structure on the **solvency** and creditworthiness of the project company
8. specifications in respect of the **excess cash flow**
9. determinations of the **financial covenants**

# EE/ RES Financing & Project Structures

Cash Flow Analysis



## Financial Model

### Purpose of a financial model

- Assessment of the financial feasibility
- Development of the financial structure
- Support in negotiations
- Support for developing the term sheet
- Analysis of downside scenarios
- Risk analysis
- Testing the risk mitigants
- Stress-testing of the repayment capacities

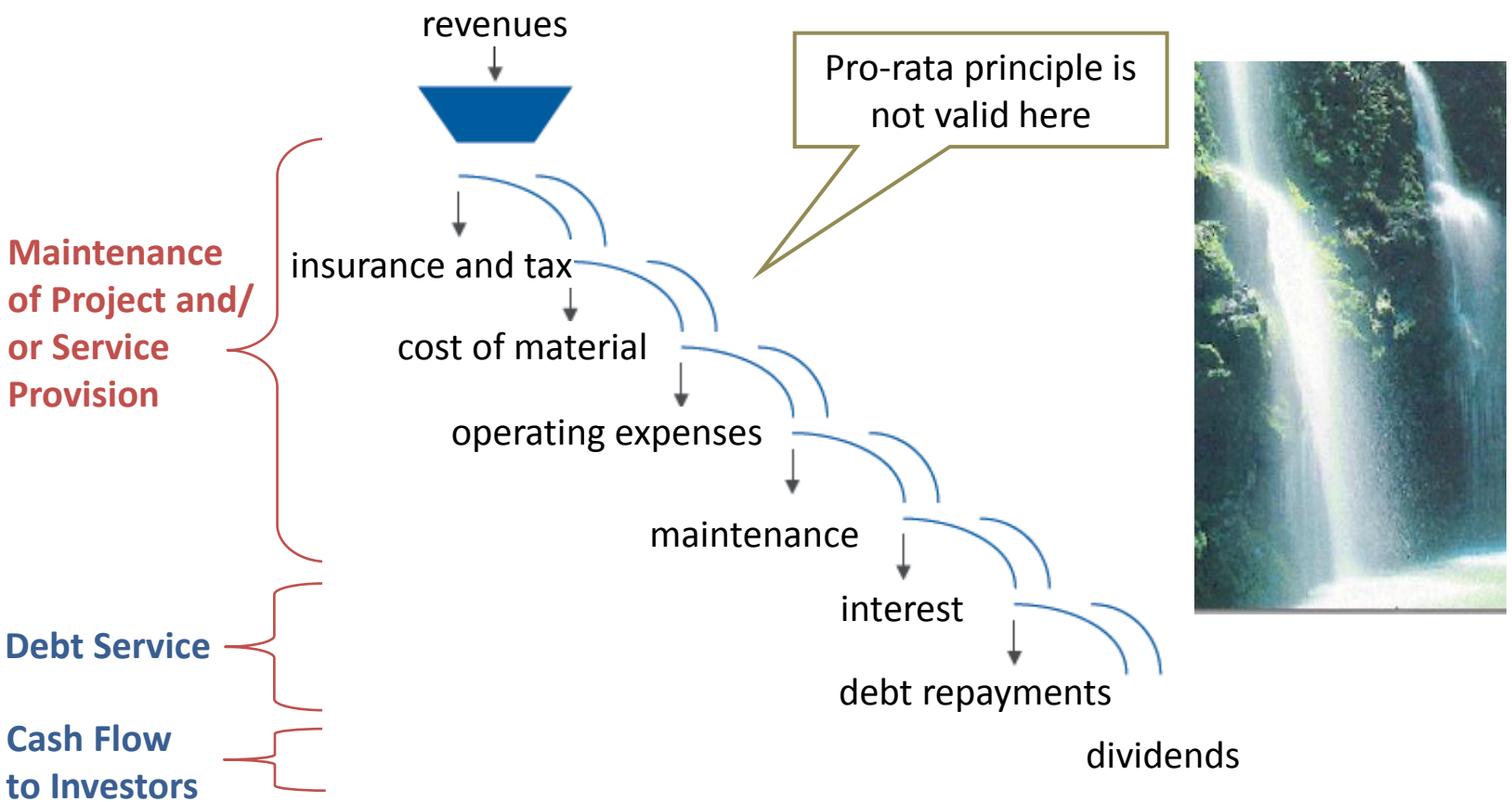
### Typical Downside Scenarios

- Completion delay
- Cost overrun
- Interest rate level
- Exchange rates
- Reduction of off-take price and/or quantity
- Cost increase
- Combined Downside Case,

# EE/ RES Financing & Project Structures

## Cash Flow Analysis – Cash Flow Waterfall





# EE/ RES Financing & Project Structures

## Cash Flow Analysis – Key Ratios



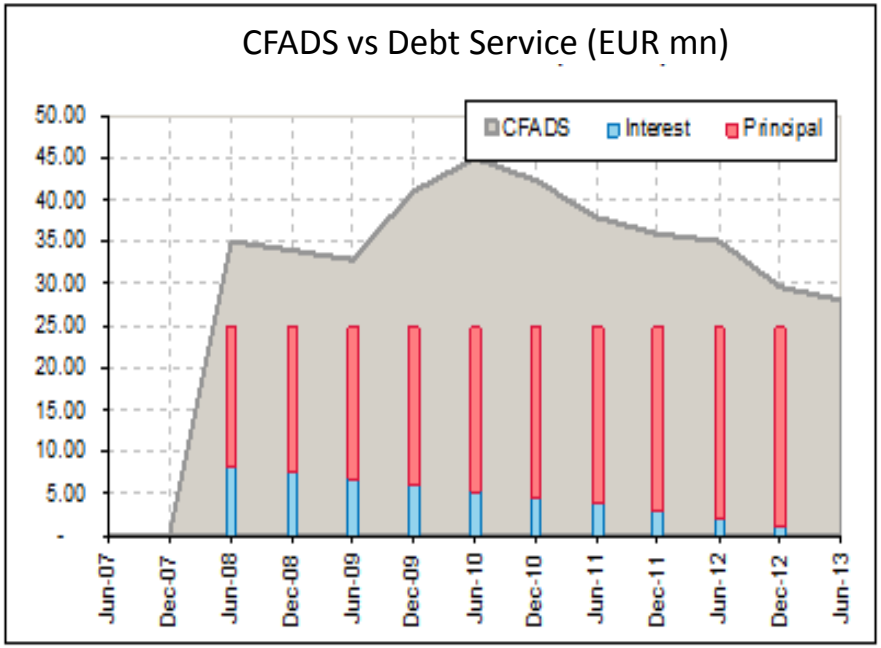
### (Annual) Debt Service Cover Ratio

**Calculation** ADSCR = Cash flow Available for Debt Service (CFADS) / Debt Service (I+P)

**Definitions** Amount of cash flow available to meet annual interest and principal payments on debt.

**Application**

- Key Project Finance Ratio
- DSCR measures how many times the CFADS can repay the Scheduled Debt Service
- A **DSCR < 1x** demonstrates insufficient CF
- Usually DSCR is calculated in every period
- Identification of the **Minimum ADSCR** is the primary method to identify a period of weak CFADS to service the debt obligations.
- If ADSCR is measured in every period, the DSCR can be a volatile measure and may fluctuate from period to period.




**Practice** ▪ Min ADSCR > 1.20x – 1.30x

# EE/ RES Financing & Project Structures

## Cash Flow Analysis – Key Ratios



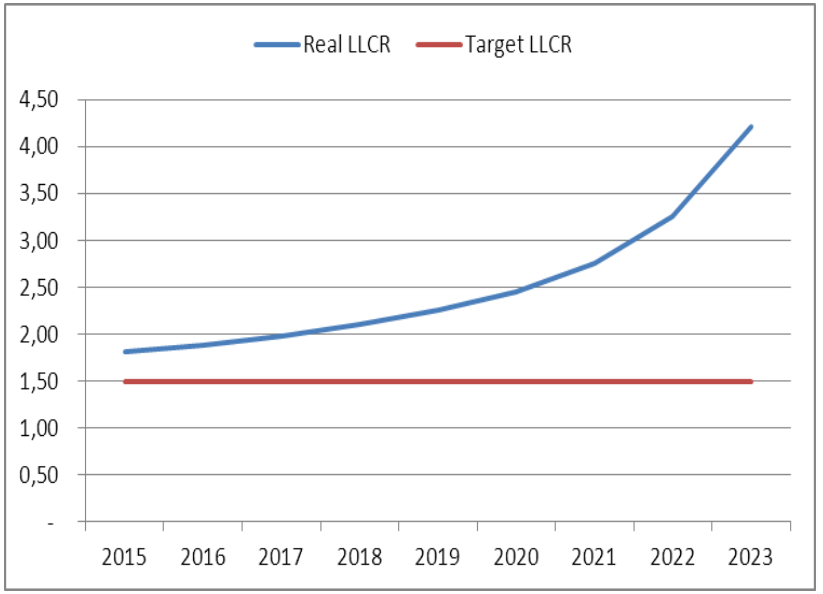
### Loan Live Coverage Ratio

**Calculation** LLCR = Net Present Value (NPV) of available CFADS over loan life / Senior Debt outstanding at the end of the period

**Definitions** A financial ratio used to estimate the ability of the borrowing company to repay an outstanding loan.

**Application**

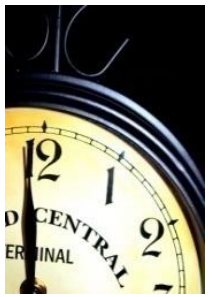
- Calculated during the term loan, in every period.
- Depends on industry, risk coverage, project phase and the relation between the loan term and project life time.
- Unlike period-on-period measures such as the DSCR, it provides an analyst with a **measure of the number of times** the cash flow over the scheduled life of the loan can repay the outstanding debt balance.
- The **discount rate** used in the NPV calculation is usually the Cost of Debt, also known as the Weighted Average Cost of Debt.




**Practice** ▪ Min LLCR ~ average DSCR (1.20 – 1.40x)

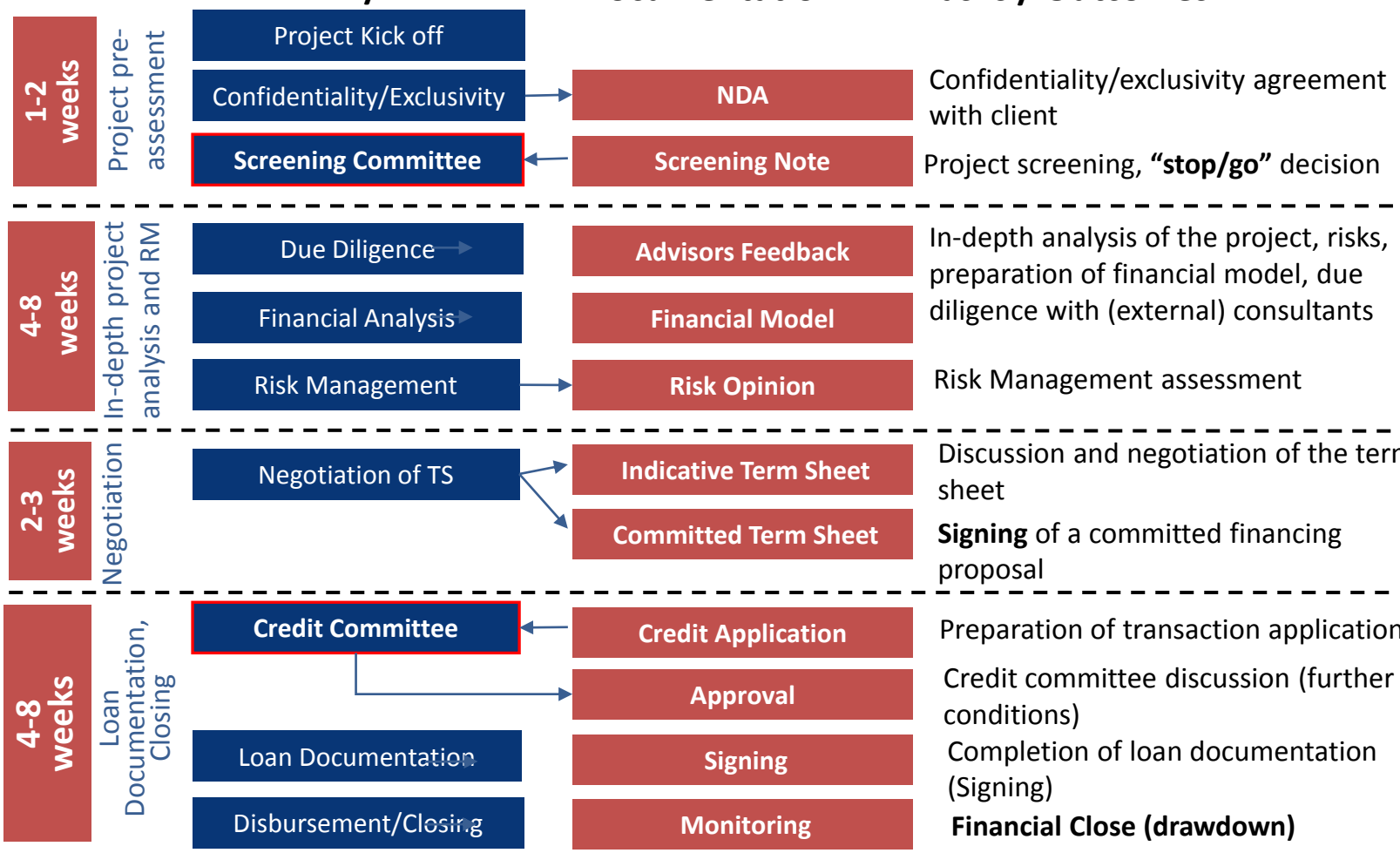
1. EE& RES Financing & Project Structures

**2. Internal Workflows**



# ERSTE Group - Internal Workflows

Documents | **Workflows** | Due Diligence | Bankability | Risks & Mitigants



# Glossary of Key Terms

| Short | Description |
|---|---|
| **(A)DSCR** | *Annual debt service cover ratio* |
| **LTV** | *Loan to Value* |
| **CFADS** | *Cash flow available for debt service* |
| **D/E Ratio** | *Debt/Equity ratio* |
| **CAPEX** | *Capital expenditure* |
| **OPEX** | *Operational cost* |
| **SPC / SPV** | *Special purpose company / Special purpose vehicle* |
| **EPC** | *Engineering, procurement, construction* |
| **P90, P75, P50** | *Probability cases (wind measurements)* |
| **PPA** | *Power purchase agreement* |
| **EIB** | *European Investment Bank* |
| **EBRD** | *European Bank for Reconstruction and Development* |
| **GCs** | *Green certificates* |
| **IFI** | *International Financial Institutions* |
| **TA/LTA** | *Technical advisor/ traffic adviser/ lenders technical adviser* |
| **DBFO / DBOM** | *Design, build, finance and operate (and maintain)* |