

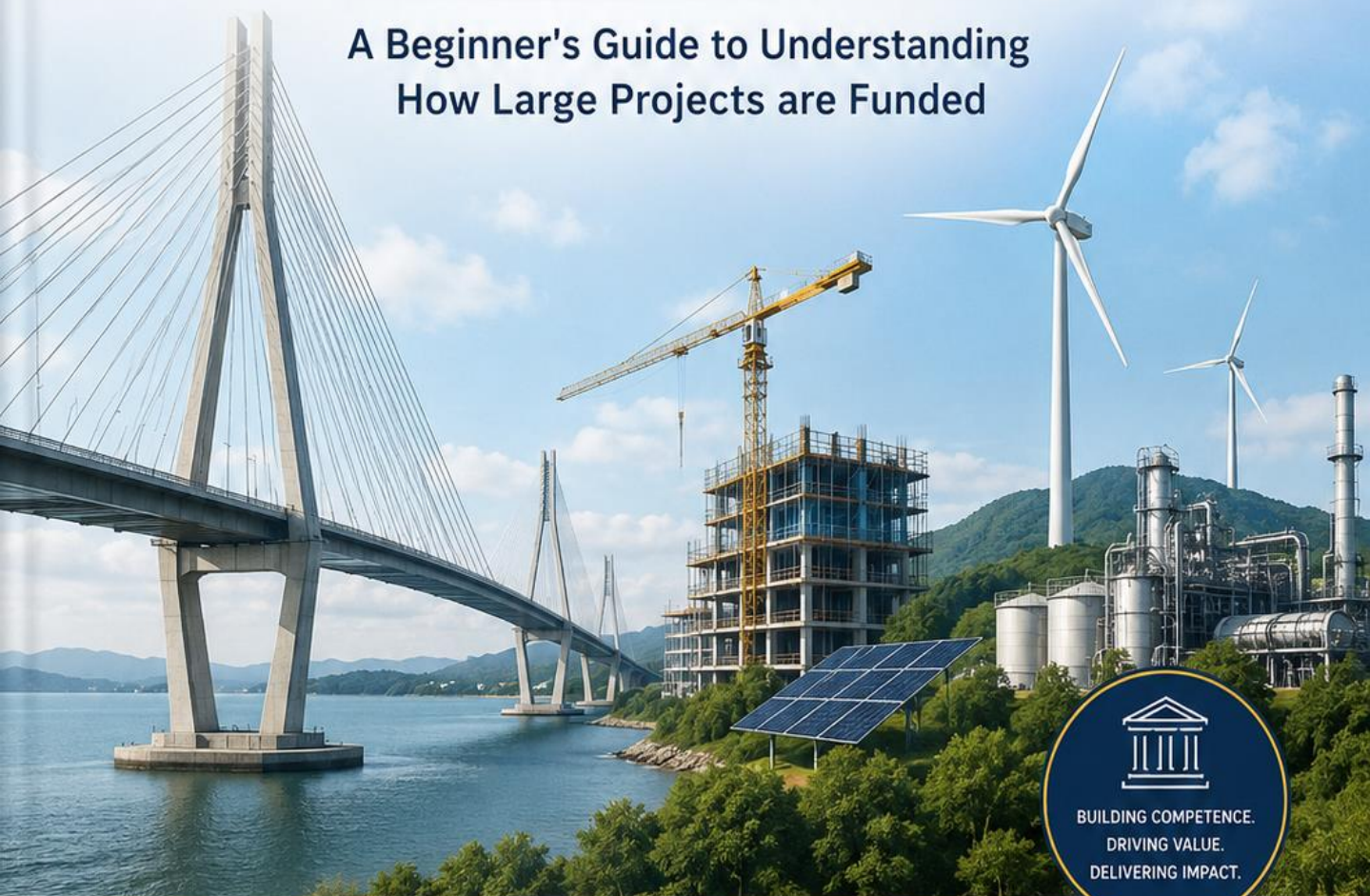


COMPETENCY FRAMEWORK

PROJECT FINANCE

TRAINING MODULE

A Beginner's Guide to Understanding
How Large Projects are Funded



BUILDING COMPETENCE.
DRIVING VALUE.
DELIVERING IMPACT.



UNDERSTAND
THE FUNDAMENTALS



EXPLORE KEY STRUCTURES
AND FINANCING SOURCES



EVALUATE RISK
AND RETURNS



ENHANCE DECISION-MAKING
FOR SUCCESSFUL PROJECTS

PROJECT FINANCE TRAINING MODULE

A Beginner's Guide to Understanding How Large Projects Are Funded

Module Level: Beginner (No Finance Background Required)

Topics Covered: Core Concepts | Risk Allocation | Key Contracts

Estimated Reading Time: 45 – 60 minutes

Watch the video tutorial | podcast on:



Module Overview

This training module introduces Project Finance from the ground up. No prior finance experience is required. By the end of this module you will be able to explain how large infrastructure projects — such as airports, toll roads, power plants, and wind farms — are funded in a way that protects the companies sponsoring them.

Learning Objectives

After completing this module, you will be able to:

- Explain what project finance is and how it differs from ordinary business lending.
- Describe the role and purpose of a Special Purpose Vehicle (SPV).
- Understand non-recourse and limited-recourse debt.
- Explain the Debt Service Coverage Ratio (DSCR) in plain language.
- Identify the main risk categories in a project finance deal.
- Describe the purpose of key contracts: EPC contracts and FIDIC conditions.
- Recognise the key parties involved in a project finance transaction.

Module Structure

Section	Topics Covered
Section 1 – What is Project Finance?	Definition, why it exists, real-world examples
Section 2 – The Special Purpose Vehicle	What an SPV is, why it is used, how it works
Section 3 – Non-Recourse Debt	Meaning, difference from corporate debt, lender security
Section 4 – The DSCR	Definition, why it matters, simple worked example
Section 5 – Key Parties	Sponsors, lenders, contractors, offtakers, government
Section 6 – Risk Allocation	Types of risk, who bears each risk, contractual tools
Section 7 – Key Contracts (EPC & FIDIC)	EPC structure, FIDIC conditions, liquidated damages
Section 8 – Knowledge Check	Review questions with answers
Section 9 – Visual Guide	Slide pictures

Section 1 – What is Project Finance?

1.1 The Core Idea

Imagine a company wants to build a large offshore wind farm. The project will cost €2 billion and will take four years to construct before generating a single euro of revenue. The question is: how does the company pay for it?

One option is to borrow the money directly — putting it on the company's own balance sheet. But this is risky: if the wind farm fails, the company itself could go bankrupt, taking its other businesses down with it.

Project finance solves this problem by creating a completely separate financial 'box' just for that one project. All the money is borrowed by that separate entity. Repayment comes entirely from the income the project generates — not from the parent company's bank account.

Definition — Project Finance

Project Finance is a method of funding a specific project based primarily on that project's own expected future cash flows, rather than on the financial strength of the company behind it.

The project's ability to earn money — not the sponsor's wealth — is what convinces lenders to provide funding.

1.2 How It Differs from Ordinary Business Lending

When a business takes out a standard bank loan, the bank looks at the whole company: its assets, its track record, its credit rating. If the business cannot repay, the bank can pursue all of the company's assets.

Project finance is different in a very specific way:

Traditional Corporate Loan	Project Finance
Lender looks at the whole company	Lender looks only at the project
Repaid from general company revenues	Repaid only from the project's own income
If the project fails, the company is liable	If the project fails, lenders can only take the project's assets
Appears on the company's balance sheet	Kept off the sponsor's balance sheet
Simpler and cheaper to arrange	More complex, more paperwork, but ring-fences risk

1.3 Where Project Finance is Used

Project finance is the financing method behind much of the world's infrastructure. Common examples include:

- Power plants (natural gas, coal, nuclear, solar, wind)
- Toll roads, bridges, and tunnels
- Airports and seaports
- Pipelines and LNG terminals
- Water treatment and desalination plants
- Hospitals and schools built under government concessions
- Data centres and telecom towers
- Mining and resource extraction projects

Real-World Example

An energy company wants to build a solar farm in Spain. It creates a new legal entity — the 'project company' — which signs all contracts, takes out all loans, and owns all the panels and land rights. The energy company contributes equity (its own money) but the bulk of the funding comes from bank loans made to the project company. The banks will be repaid from the electricity sales over the next 20 years. If the solar farm underperforms, the banks may lose money — but they cannot come after the energy company's other assets.

Section 2 – The Special Purpose Vehicle (SPV)

2.1 What is an SPV?

A Special Purpose Vehicle — often called an SPV or a Project Company — is a separate legal entity created for the sole purpose of developing, building, and operating one specific project.

Think of it like a dedicated company set up for just one job. It has no other business. It owns no other assets. Its only purpose is to execute the project it was created for.

Key Characteristics of an SPV

- Created specifically for one project — it has no other business history or activities.
- Legally separate from its parent company (the sponsor).
- Owns all the assets of the project: land rights, permits, equipment, and contracts.
- Borrows all the project debt in its own name.
- Has a finite lifespan — it is wound up once the project concession or loan period ends.
- Its finances are kept off the sponsor's balance sheet.

2.2 Why Use an SPV?

The SPV serves several important purposes at once:

Purpose	What it Means	Benefit
Ring-fence risk	The SPV holds all risk from the project	Parent company is protected if the project fails
Raise large debt	Borrowing is done at the project level	Does not affect the sponsor's credit rating
Multi-party structure	Different investors can each own a share of the SPV	Allows risk and ownership to be shared
Transparent monitoring	All project finances are in one entity	Lenders can easily monitor cash flows
Legal clarity	Contracts, permits, and assets are in one name	Reduces disputes about ownership

2.3 Who Owns the SPV?

The SPV is owned by the project's sponsors — the companies or investors who initiated the project. They contribute equity capital (their own money) in return for shares in the SPV.

Sponsors are often large energy companies, infrastructure funds, construction groups, or government-linked investors. It is common for two or three sponsors to jointly own an SPV, each holding a percentage of the shares.

Analogy — The SPV as a Separate House

Imagine you own a large house (your company). You want to build a new annexe (the project).

Instead of adding it to your house — which would complicate your mortgage and put your home at risk — you build the annexe as a completely separate property, owned by a new limited company you create just for that purpose. The annexe's mortgage is secured against the annexe alone. If the annexe burns down, your main house is safe.

That new limited company is the SPV.

Section 3 – Non-Recourse and Limited-Recourse Debt

3.1 What Does 'Non-Recourse' Mean?

'Recourse' is a legal term meaning the right to pursue someone for repayment. In a standard loan, if you cannot pay, the lender has 'recourse' to your personal or business assets.

Non-recourse debt means the opposite: if the project company (SPV) cannot repay the loan, the lender can only take the project's own assets — the physical infrastructure, the contracts, the revenues. The lender cannot go after the sponsor's own assets, bank accounts, or other businesses.

Non-Recourse in Plain Language
Think of a home mortgage. If you default, the bank takes your house.
In most standard mortgages, if the house sale does not cover the debt, the bank can pursue your other savings and assets too — that is 'recourse'.
In non-recourse project finance, the lender takes the project assets if things go wrong.
That is all. They cannot reach into the sponsor company's other accounts.
The risk stays inside the 'box' of the SPV.

3.2 Limited-Recourse Debt

In practice, pure non-recourse debt is rare. More commonly, lenders negotiate limited-recourse debt, where the sponsor has some obligations — particularly during construction.

Typical limited-recourse arrangements include:

- **Completion guarantees:** The sponsor guarantees that the project will actually be built to specification. Until the project is operational, sponsors may have to cover cost overruns.
- **Equity injection obligations:** Sponsors may be required to contribute additional equity if the project's costs rise above forecast.
- **Environmental or legal liabilities:** In cases of fraud, misrepresentation, or environmental violations, recourse to the sponsors is usually preserved.

Once the project reaches 'commercial operation' — meaning it is built and running as designed — the limited-recourse obligations usually fall away, and the structure converts to a fully non-recourse basis.

3.3 Why Do Lenders Accept Non-Recourse Terms?

Lending without recourse to a wealthy parent company sounds very risky. Lenders accept these terms because they compensate with strong structural protections:

- Security over all project assets: Lenders take a legal charge over the SPV's assets — the turbines, pipelines, land rights, and contracts. If the project defaults, lenders can sell or operate these assets.
- Contractual protections: The project's contracts — including offtake agreements that guarantee revenue — are assigned to the lenders as security.
- Cash flow control: Lenders control how the SPV's money is distributed through a strict structure called a cash flow waterfall (covered in detail in advanced modules).
- Reserve accounts: The SPV is required to hold cash reserves — typically 6 months of debt service — as a buffer against short-term cash shortfalls.
- Debt covenants: Lenders impose detailed rules the SPV must follow. If the SPV breaches these rules, lenders may demand early repayment.

Section 4 – The Debt Service Coverage Ratio (DSCR)

4.1 What is the DSCR?

The Debt Service Coverage Ratio — almost always written as DSCR — is the single most important number in project finance. It answers one simple question:

The Core Question
Does the project earn enough cash to pay its debt obligations — and by how much?
$\text{DSCR} = \text{Cash Available for Debt Service} \div \text{Total Debt Service Due}$
'Cash Available for Debt Service' (CFADS) = revenues minus operating costs
'Total Debt Service Due' = loan repayments plus interest payments in that period

4.2 Interpreting the DSCR

The DSCR is expressed as a number, not a percentage. Here is how to read it:

DSCR Value	What It Means
DSCR below 1.0x	The project does NOT earn enough to pay its debt. It is in financial distress.
DSCR = 1.0x	The project earns exactly enough to cover its debt — with zero margin for error.
DSCR = 1.2x	The project earns 20% more than its debt obligations. This is the typical minimum lenders require.
DSCR = 1.5x	The project earns 50% more than needed. Comfortable headroom. Lenders feel safe.
DSCR above 2.0x	Very strong. Rarely needed, but provides a large safety buffer.

4.3 A Simple Worked Example

Imagine a toll road project in its first full year of operation:

- Annual revenue from tolls: €18,000,000
- Annual operating costs (maintenance, staff, insurance): €6,000,000
- Cash Available for Debt Service (CFADS): €18m – €6m = €12,000,000
- Annual debt repayment: €7,000,000
- Annual interest payments: €3,000,000
- Total Debt Service: €7m + €3m = €10,000,000

Calculation
$\text{DSCR} = €12,000,000 \div €10,000,000 = 1.20x$
This means the project earns 20% more cash than it needs to service its debt.
A DSCR of 1.20x is at the minimum threshold most lenders will accept.
Lenders for less risky projects may require 1.30x or higher.

4.4 Why Does the DSCR Matter So Much?

Lenders use the DSCR in several critical ways throughout the life of the project:

- During loan approval: Lenders model the DSCR across the life of the loan under 'base case' assumptions and under 'downside scenarios'. The project must maintain a minimum DSCR even if things go worse than expected.
- Covenant testing: The loan agreement will typically specify a minimum DSCR the SPV must maintain (e.g. 1.15x). If the DSCR falls below this level, the SPV is in breach of its covenant and lenders may act.
- Distribution lock-up: If the DSCR falls below a certain threshold (e.g. 1.20x), the SPV is typically prevented from paying dividends to sponsors until the ratio recovers.
- Loan sizing: Lenders use DSCR modelling to determine how much debt the project can safely carry — higher debt means higher repayments, which reduces the DSCR.

Section 5 – Key Parties in a Project Finance Deal

A project finance transaction is not just between a borrower and a bank. It involves a web of parties, each with a specific role and set of interests. Understanding who each party is — and what they want — is essential to understanding how the structure works.

5.1 The Sponsors (Equity Investors)

The sponsors are the companies or investors who initiate the project and own the SPV. They contribute equity — their own money — typically representing 20–30% of total project costs. Sponsors bear the highest risk: if the project fails, they lose their equity investment first.

In return, sponsors receive dividends from the project's cash flows after all debt has been serviced. For a successful project, equity returns can be substantial.

5.2 Lenders (Debt Providers)

Lenders provide the majority of project funding — typically 70–80% of total costs. In return they receive interest payments and eventual repayment of their principal. Lenders take a lower risk than sponsors (they are repaid first) but also receive a lower return.

Common types of lenders in project finance include:

- Commercial banks: Provide syndicated loans (where multiple banks share the loan between them).
- Multilateral Development Banks (MDBs): Institutions such as the World Bank, European Investment Bank (EIB), or African Development Bank. They often finance projects in developing markets or with sustainability goals.
- Export Credit Agencies (ECAs): Government-backed lenders that support projects using exports from their home country (e.g. UK Export Finance, SACE of Italy).
- Institutional investors: Pension funds and insurance companies increasingly buy project bonds — long-term, fixed-rate debt securities issued by SPVs — for their stable returns.

5.3 Offtakers

The offtaker is the party that agrees to buy the project's output — electricity, water, capacity, or services — usually under a long-term contract. The offtake agreement is critical: it provides the predictable revenue stream that allows lenders to be confident the project can repay its debt.

Examples of offtake agreements:

- **Power Purchase Agreement (PPA):** A utility or government agency agrees to buy electricity from a power plant for 15–25 years at an agreed price.
- **Concession Agreement:** A government grants the right to operate a toll road or airport and collect user fees.
- **Take-or-Pay Contract:** A buyer agrees to either take the product (e.g. gas) or pay a fixed fee if they do not.

5.4 The EPC Contractor

The Engineering, Procurement, and Construction (EPC) contractor is the company responsible for actually building the project. In project finance, EPC contracts are usually 'fixed-price, lump-sum, turnkey' arrangements — meaning the contractor agrees to deliver a fully operational facility for a fixed price by a fixed date.

This is critical for risk allocation: the construction risk (cost overruns, delays) is transferred from the SPV to the EPC contractor.

5.5 The O&M Contractor

Once the project is built, an Operations and Maintenance (O&M) contractor takes responsibility for its day-to-day running. The O&M contractor guarantees the facility will perform to a minimum standard (e.g. minimum power output). Poor performance is penalised through deductions in fees.

5.6 The Host Government / Regulatory Bodies

The host government provides the legal framework within which the project operates. Their role includes issuing concessions, permits, and licenses; setting tariff or pricing frameworks; and providing political and regulatory stability. Without this, lenders will not fund the project.

Section 6 – Risk Allocation

6.1 The Golden Rule of Project Finance

The most important principle in risk allocation is simple:

The Golden Rule
Each risk should be allocated to the party best able to manage, control, or absorb it.
Risks that are poorly allocated — or not allocated at all — will eventually be priced into the debt cost, reduce lender appetite, or sink the project entirely.

6.2 The Main Risk Categories

Project finance risks are typically grouped into the following categories:

Risk Type	Description	Who Typically Bears It
Construction Risk	Cost overruns, delays, failure to build to spec	EPC Contractor (via fixed-price contract)
Technology Risk	New or unproven technology fails to perform	EPC Contractor + Sponsors
Revenue / Demand Risk	The project earns less than forecast (fewer users, lower prices)	Offtaker (via PPA/concession) or Sponsors
Operating Risk	Higher-than-expected running costs, equipment failure	O&M Contractor
Supply Risk	Raw materials or fuel not available at forecast price	Fuel/supply supplier (via supply agreement)
Interest Rate Risk	Floating loan rates rise, increasing debt service	SPV (hedged with interest rate swaps)
Currency Risk	Project earns in local currency, debt is in foreign currency	SPV + Sponsors (hedging instruments)
Political / Regulatory Risk	Government changes rules, nationalises, or fails to grant permits	Host Government + Insurance (PRI)
Force Majeure	War, natural disaster, pandemic — events beyond anyone's control	Shared / Insurance
Environmental Risk	Unforeseen environmental conditions or compliance costs	SPV + Sponsors

6.3 How Risks Are Managed in Practice

Risks are managed through a combination of contractual structures, financial instruments, and reserve accounts:

- Fixed-price EPC contract: Transfers construction cost and schedule risk to the contractor.
- Liquidated Damages (LDs): Financial penalties written into the EPC contract for late delivery or underperformance.
- Long-term offtake agreements: Reduce revenue uncertainty by locking in a buyer and a price.
- Insurance policies: Cover force majeure, property damage, third-party liability, and political risk.
- Interest rate hedging: Swap agreements fix the interest rate the SPV pays, removing the risk of rate increases.
- Debt Service Reserve Accounts (DSRA): Cash held in reserve to cover 3–6 months of debt payments if revenues fall short.
- Maintenance reserve accounts: Cash set aside for scheduled major maintenance costs.

Why Risk Allocation Matters for Lenders

Lenders do not want to take risk they cannot control. Their due diligence process — which can take 12–18 months — is largely a risk review. Every major risk must be identified and a credible plan must exist to mitigate or transfer it. If a risk cannot be satisfactorily allocated, lenders will refuse to fund the project, require a higher interest rate, or demand additional equity from sponsors.

Section 7 – Key Contracts: EPC and FIDIC

7.1 The EPC Contract — Engineering, Procurement, and Construction

The EPC contract is the backbone of a project finance deal during the construction phase. It is the agreement between the SPV (as employer) and the main contractor (as EPC contractor) for the design and delivery of the physical infrastructure.

7.1.1 What EPC Means

- **Engineering:** The contractor is responsible for designing the facility to meet the specified technical requirements.
- **Procurement:** The contractor purchases and supplies all equipment, materials, and systems needed to build and equip the project.
- **Construction:** The contractor physically builds the facility and hands it over as a fully operational unit.

7.1.2 The 'Fixed-Price Lump-Sum Turnkey' Model

In project finance, EPC contracts are almost always structured on a fixed-price, lump-sum, turnkey basis. This means:

- **Fixed Price:** The contractor agrees to build the entire facility for a single agreed price. If actual costs are higher, the contractor absorbs the overrun (not the SPV or lenders).
- **Lump Sum:** A single total payment for the whole scope — no cost-plus arrangements that could allow costs to escalate.
- **Turnkey:** The contractor delivers a 'turn-key ready' facility — one that the owner can immediately put into commercial operation, having passed all performance tests.

Why This Matters to Lenders

From a lender's perspective, a fixed-price, lump-sum, turnkey EPC contract is highly desirable because it transfers construction risk to the contractor. As long as the EPC contractor is creditworthy and capable, lenders can have confidence that the project will be built on time and within budget — or that the contractor will bear the financial consequences of any failure.

7.1.3 Liquidated Damages (LDs)

A well-structured EPC contract will include Liquidated Damages — often abbreviated as LDs. These are pre-agreed financial penalties the EPC contractor must pay if it fails to meet key obligations:

- **Delay LDs:** Paid for each day (or week) the project is completed late beyond the agreed completion date. Compensates the SPV for lost revenues during the delay period.
- **Performance LDs:** Paid if the completed facility does not achieve the minimum performance levels specified in the contract (e.g. a power plant that generates less electricity than guaranteed).

LDs are a critical protection for both the SPV and its lenders. They ensure that the EPC contractor has a strong financial incentive to complete the project on time and to specification.

7.2 FIDIC Contracts

FIDIC stands for Fédération Internationale des Ingénieurs-Conseils — the International Federation of Consulting Engineers. FIDIC publishes internationally recognised standard conditions of contract for construction and engineering projects.

FIDIC contracts are used across the world and are particularly common in infrastructure and project-financed developments. They provide a comprehensive, standardised legal framework that both parties and their lenders can rely on.

7.2.1 The Main FIDIC Books

FIDIC Book	Used For
Red Book (Conditions of Contract for Construction)	Building and engineering works where the Employer's designer designs the work. Often used for civil infrastructure.
Yellow Book (Plant and Design-Build)	Works where the Contractor both designs and builds, including electrical and mechanical plant. Very common in project finance.
Silver Book (EPC/Turnkey Projects)	Used specifically for EPC and turnkey projects — most aligned with project finance structures. Maximum risk transfer to the contractor.
Gold Book (Design, Build and Operate)	For projects that combine construction with a long-term operating period — relevant for PPP projects.

7.2.2 Key Features of FIDIC Contracts

- **Defined roles:** Clear responsibilities for the Employer (the SPV), the Engineer (an independent certifier), and the Contractor.
- **Payment mechanisms:** Structured progress payments, typically certified by the Engineer.
- **Variation procedures:** A controlled process for authorising and valuing changes to scope — prevents uncontrolled cost creep.
- **Dispute resolution:** FIDIC contracts include a tiered dispute resolution process: first through a Dispute Adjudication Board (DAB), then arbitration if needed.
- **Force Majeure provisions:** Define what events are truly beyond anyone's control and how risk is shared in those circumstances.
- **Taking Over and Completion:** Define the tests and procedures for handing over the completed project.

FIDIC and Project Finance — Why It Matters

Lenders reviewing a project finance deal pay close attention to the contract conditions.

A FIDIC Silver Book contract — with its high degree of risk transfer to the EPC contractor — is often seen as the gold standard for lender comfort during construction.

If a project uses a bespoke or non-standard contract, lenders will require detailed legal review to satisfy themselves that equivalent protections exist.

Section 8 – Knowledge Check

Test your understanding with the questions below. Answers are provided.

Question 1: What is the primary source of repayment in a project finance deal?

- A. The parent company's revenues
- B. The project's own future cash flows
- C. The EPC contractor's balance sheet
- D. The host government's tax revenues

Answer: B — In project finance, lenders are repaid primarily from the cash flows generated by the project itself, not from the sponsor's general funds.

Question 2: What does the acronym SPV stand for, and what is its main purpose?

- A. Special Payment Vehicle — to manage cash flows
- B. Special Purpose Vehicle — a separate legal entity created solely to own and operate one project
- C. Structured Project Valuation — a financial model
- D. Single Project Vehicle — a bank account for the project

Answer: B — The SPV is a legally separate entity created exclusively for one project. It ring-fences the project's risks and finances from the sponsor.

Question 3: A project generates €15 million in cash available for debt service (CFADS) and has annual debt obligations of €10 million. What is the DSCR?

- A. 0.67x
- B. 1.5x
- C. 2.5x
- D. 15%

Answer: B — $DSCR = €15m \div €10m = 1.5x$. The project earns 50% more cash than is needed to cover its debt service.

Question 4: What does 'non-recourse' debt mean in project finance?

- A. The lender can never be repaid
- B. If the project fails, lenders can only pursue the project's assets — not the sponsor's other assets
- C. The sponsor has no obligation to contribute equity
- D. The government guarantees the debt

Answer: B — Non-recourse means lenders are limited to the project's own assets as collateral. They cannot pursue the parent sponsor's balance sheet.

Question 5: In an EPC contract, what do Liquidated Damages (LDs) protect against?

- A. Currency fluctuations
- B. The contractor being overpaid
- C. Delays and performance shortfalls by the EPC contractor

D. Changes in interest rates

Answer: C — LDs are pre-agreed financial penalties imposed on the EPC contractor for late completion (delay LDs) or failure to meet performance specifications (performance LDs).

Question 6: Which FIDIC book is most commonly associated with project-financed EPC/turnkey contracts?

- A. Red Book
- B. Yellow Book
- C. Silver Book
- D. Gold Book

Answer: C — The FIDIC Silver Book (EPC/Turnkey Projects) is specifically designed for EPC and turnkey structures, with maximum risk transfer to the contractor — making it the most aligned with project finance requirements.

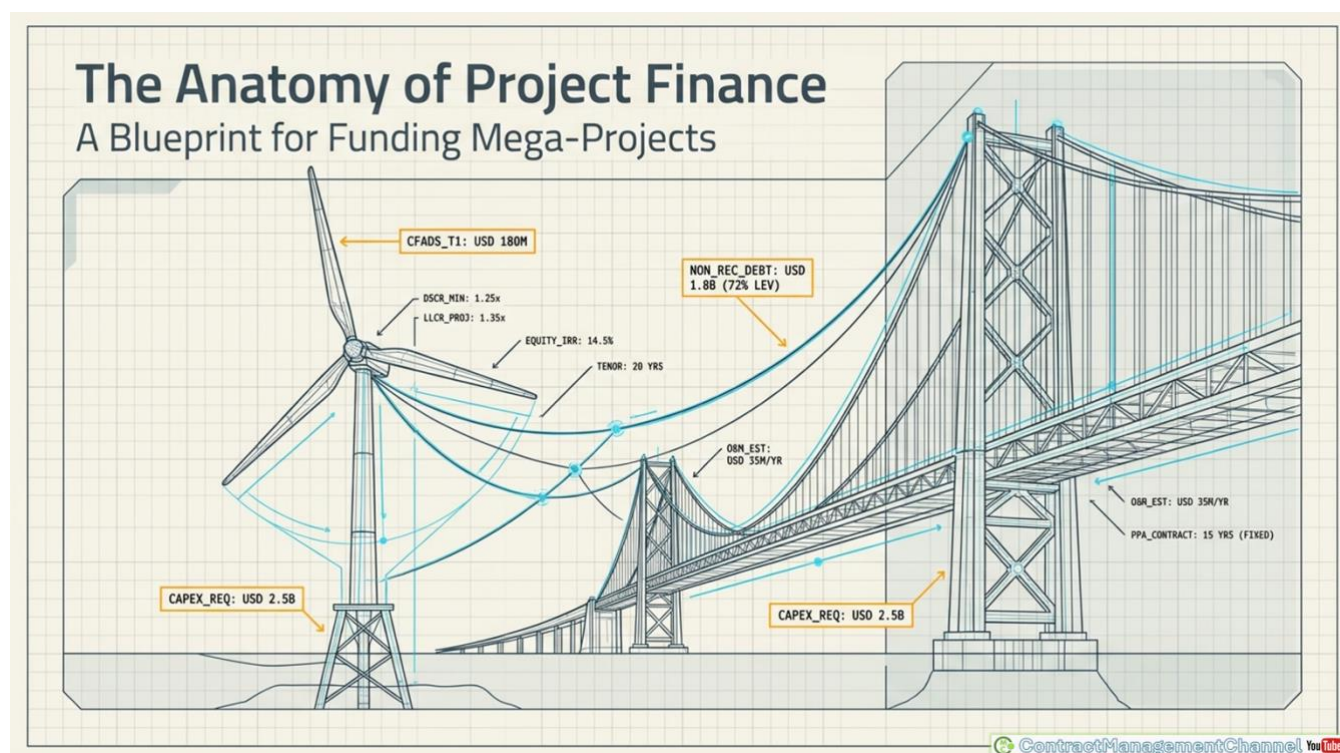
Question 7: Who is the 'offtaker' in a project finance deal?

- A. The bank that provides the debt
- B. The party that buys the project's output under a long-term agreement
- C. The contractor who builds the facility
- D. The government regulator

Answer: B — The offtaker is the buyer of the project's output (e.g. electricity, water, capacity). Their long-term purchase commitment provides the revenue certainty lenders need.

Section 9 – Visual Guide

The following pictures provide a visual guide to this Training Module.



How do you fund a €2 Billion Wind Farm?

The Problem
4 years to build.
Zero revenue until completion.

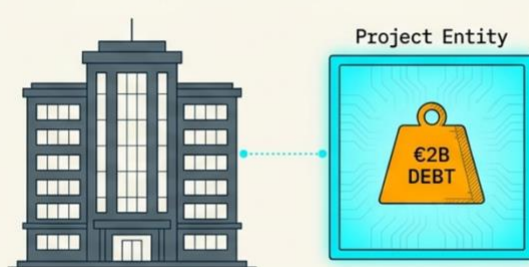
The Corporate Risk

Borrowing €2B directly puts the sponsor's entire balance sheet at risk. If the wind farm fails, the parent company goes bankrupt.



The Project Finance Solution

Create a completely separate financial box. The project's ability to earn money—not the sponsor's wealth—secures the funding.

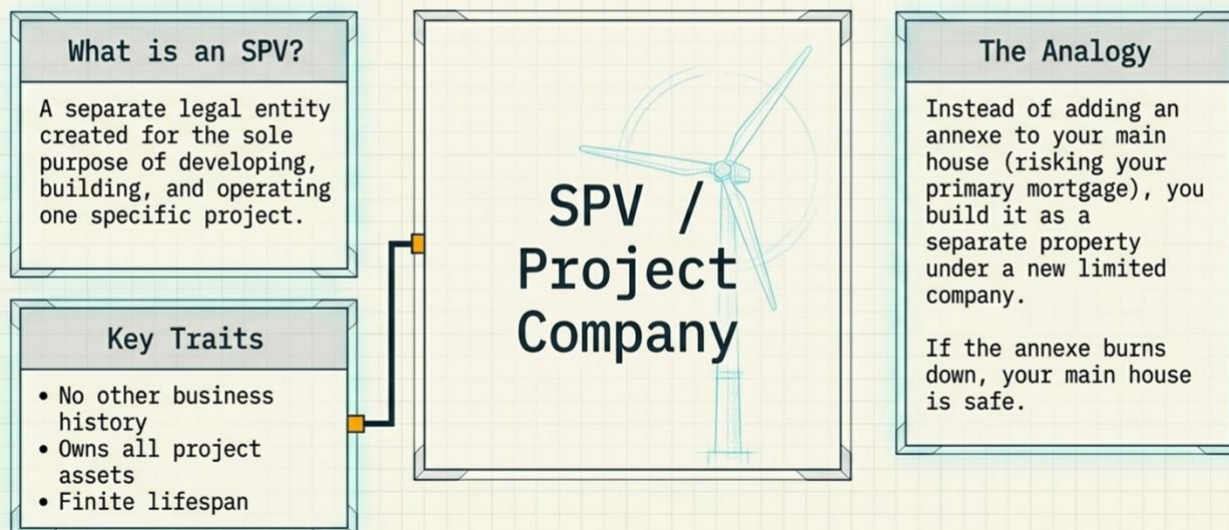


A Tale of Two Loans

	Traditional Corporate Loan	Project Finance
Lender Focus	Looks at the whole company	Looks only at the project
Repayment Source	General company revenues	Only the project's own income
Default Liability	Lenders pursue all company assets	Lenders can only take project assets
Balance Sheet	Appears on sponsor's balance sheet	Kept off the sponsor's balance sheet
Complexity	Simpler and cheaper to arrange	Highly complex, multi-party structure

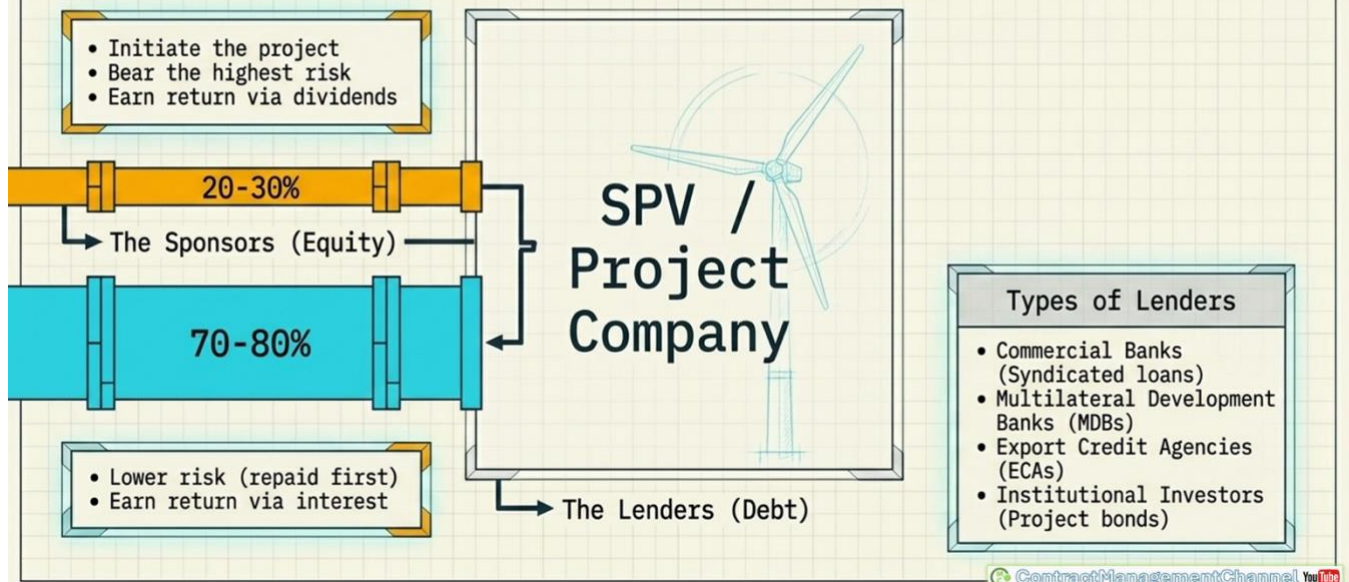
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The Core Engine: The Special Purpose Vehicle (SPV)

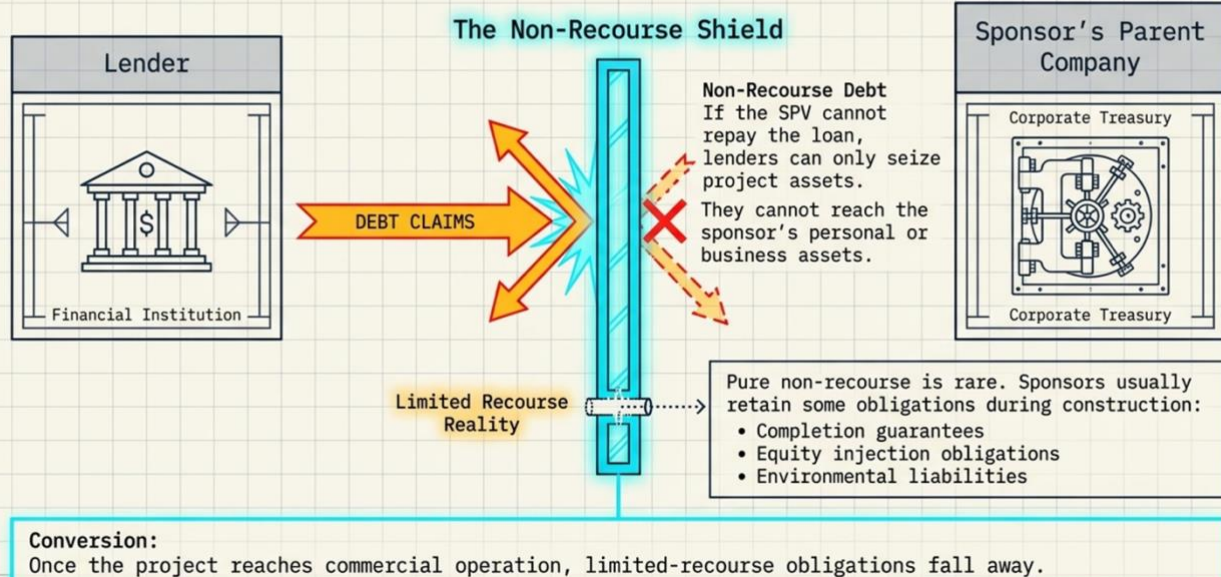


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The Capital Stack: Equity vs. Debt



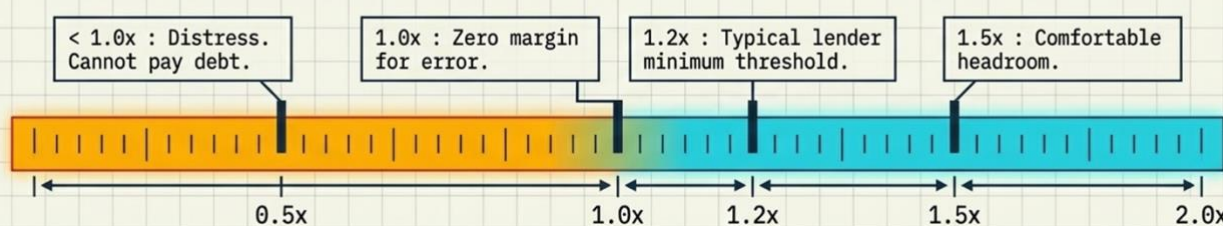
The Ultimate Shield: Non-Recourse Debt



The Master Metric: Debt Service Coverage Ratio (DSCR)

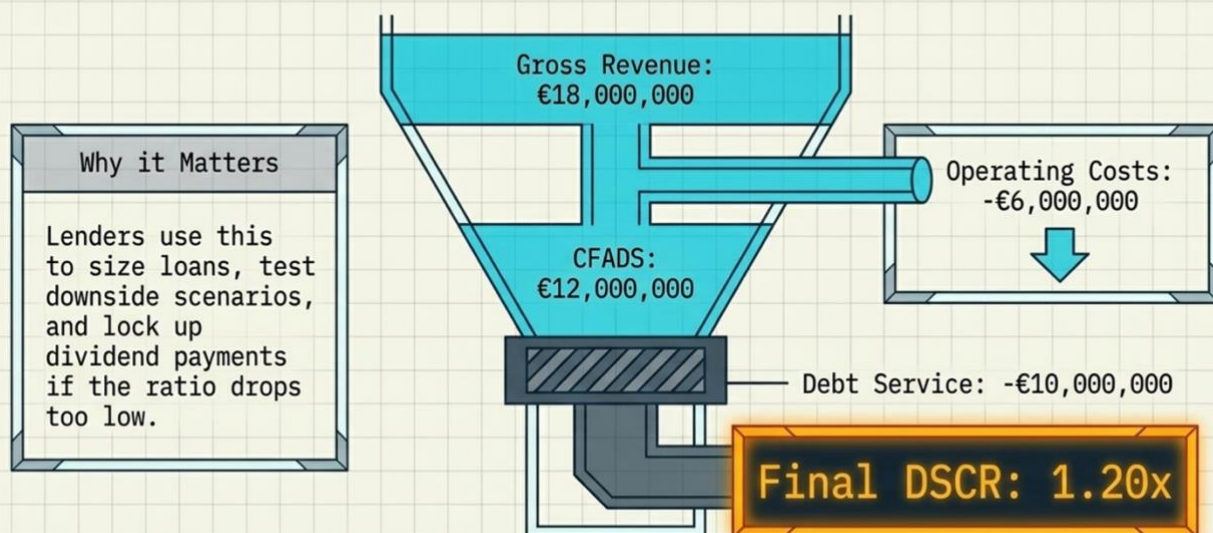
The Core Question: Does the project earn enough cash to pay its debt obligations—and by how much?

$$\text{DSCR} = \frac{\text{Cash Available for Debt Service (CFADS)}}{\div \text{Total Debt Service Due}}$$



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DSCR in Action: The Toll Road Stress Test



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The Golden Rule of Risk

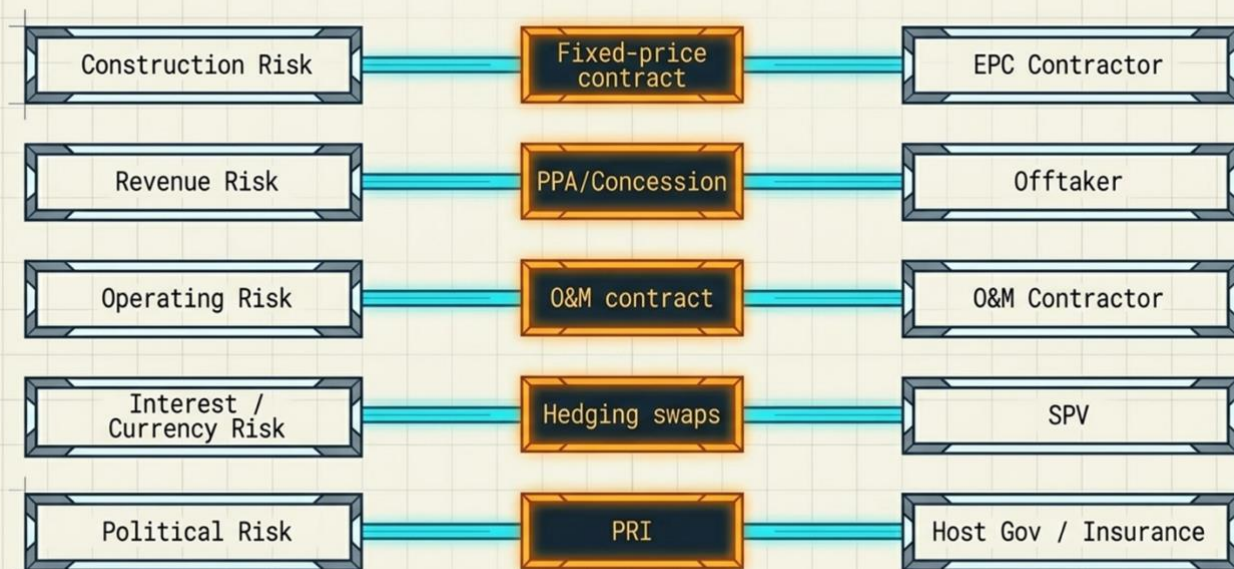
"Each risk should be allocated to the party best able to manage, control, or absorb it."

Risks that are poorly allocated—or not allocated at all—will be priced into the debt cost, reduce lender appetite, or sink the project entirely.

Lender due diligence is primarily a 12-to-18-month exercise in risk review. Unmitigated risks mean no funding.

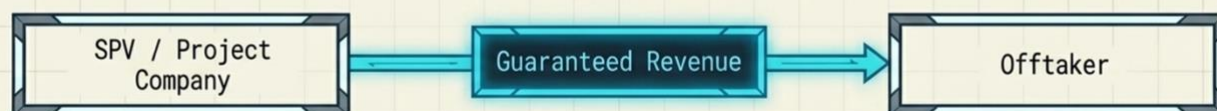
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The Risk Allocation Matrix



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Revenue Certainty: The Offtaker



The Role

The party that guarantees they will buy the project's output under a long-term contract.

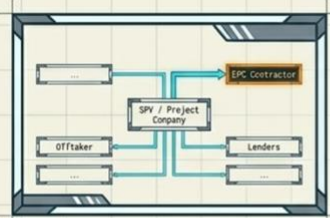
Without revenue certainty, lenders will not lend.

Types of Agreements

- PPA (Power Purchase Agreement): Utility buys electricity at an agreed price for 15-25 years.
- Concession: Government grants the right to collect user fees (e.g., toll road).
- Take-or-Pay: Buyer pays a fixed fee even if they don't take the product.

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Construction Certainty: The EPC Contract



Engineering
The contractor designs



Procurement
buys materials



Construction
and builds the physical infrastructure.



The Standard: Fixed-Price, Lump-Sum, Turnkey.

- Fixed-Price: Contractor absorbs cost overruns, not the SPV.
- Lump-Sum: A single total payment (no cost-plus escalation).
- Turnkey: Delivered ready for immediate commercial operation.



Turnkey Asset

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Enforcing Performance: FIDIC & Liquidated Damages

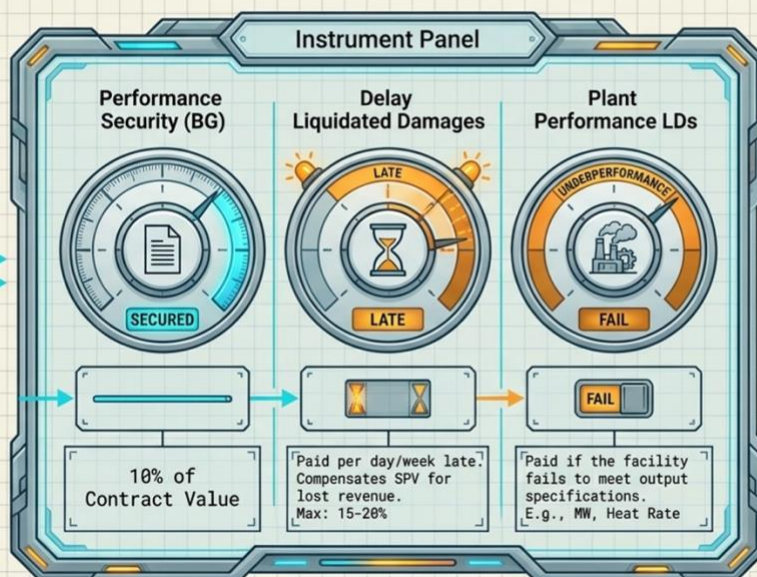
FIDIC Standards

Internationally recognized construction contract conditions.

The Silver Book is the gold standard for EPC/Turnkey projects, maximizing risk transfer to the contractor.

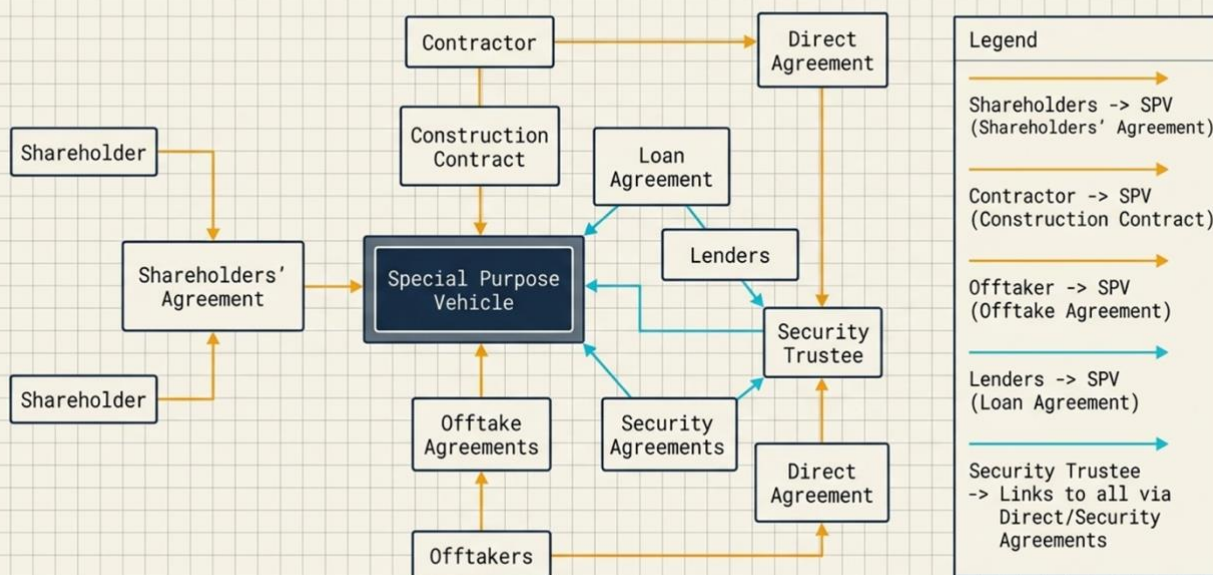
Liquidated Damages (LDs)

Pre-agreed financial penalties for failure.



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Synthesis: The Complete Deal Map



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Glossary of Key Terms

Term	Definition
CFADS	Cash Flow Available for Debt Service — the cash a project generates after operating costs, available to pay lenders.
Completion Guarantee	A sponsor commitment to ensure the project reaches completion — even if additional funds are needed.
Concession Agreement	A contract where a government grants the right to build, operate, and collect revenues from a public asset (e.g. toll road, airport).
DSCR	Debt Service Coverage Ratio — CFADS divided by total debt service due. Measures financial headroom.
DSRA	Debt Service Reserve Account — cash held in reserve to cover 3–6 months of debt payments.
ECA	Export Credit Agency — a government-backed lender that supports projects using exports from its home country.
EPC Contract	Engineering, Procurement and Construction Contract — the agreement for the design and delivery of the physical facility.
FIDIC	Fédération Internationale des Ingénieurs-Conseils — publisher of internationally recognised standard contract conditions.
Force Majeure	Events beyond the control of either party (war, natural disaster) that may excuse contractual performance.
LLCR	Loan Life Coverage Ratio — similar to DSCR but measured over the entire remaining life of the loan.
Liquidated Damages	Pre-agreed financial penalties for contractor delays or performance shortfalls.
Limited Recourse	A structure where lender recourse to the sponsor is limited to specific, defined circumstances.
MDB	Multilateral Development Bank — institutions such as the World Bank or EIB that provide finance for development projects.
Non-Recourse	A lending structure where lenders can only pursue the project's own assets upon default.
O&M Contract	Operations and Maintenance Contract — agreement for managing the day-to-day running of the facility after construction.
Offtake Agreement	A long-term contract for the purchase of the project's output (e.g. power, water).

PPA	Power Purchase Agreement — a long-term contract to buy electricity from a power plant at an agreed price.
PPP	Public-Private Partnership — a project jointly developed and financed by public and private parties.
Security Package	The set of legal rights lenders take over project assets, contracts, and accounts.
SPV	Special Purpose Vehicle — the separate legal entity created to own and operate the project.
Sponsor	The equity investor(s) who initiate and own the SPV.
Turnkey Contract	A contract where the contractor delivers a fully complete, operational facility.
Waterfall	The priority order in which a project's cash is distributed — typically: operating costs, debt service, reserves, then equity dividends.

Further Reading & Resources

This module has introduced the core concepts of project finance. The following resources are recommended for deeper study:

Resource	Focus Area
Project Finance Institute (projectfinanceinstitute.com)	Structured professional training, PPPs, infrastructure finance, and financial modelling.
Corporate Finance Institute — Project Finance Explained (corporatefinanceinstitute.com)	Clear explanations of SPVs, non-recourse financing, cash flow waterfalls, and infrastructure funding.
Edward Bodmer (edbodmer.com)	Advanced: technical modelling resources, DSCR sculpting, Excel models for renewable energy projects.
LegalClarity — What Is Project Finance and How Does It Work? (legalclarity.org)	Strong legal perspective on non-recourse debt, lender security, and risk isolation structures.
Stocks Mantra — Project Finance Explained (stocksmantra.com)	Beginner-friendly overview of SPVs, limited recourse debt, risk allocation, and EPC contracts.
ABiQ — Project Finance in a Nutshell (abiq.io)	Concise summary of project finance characteristics, especially for infrastructure and PPP contexts.
FIDIC (fidic.org)	Official source for FIDIC contract documents — Red, Yellow, Silver, and Gold Books.
Project Finance International — PFI (pfie.com)	Industry publication covering global project finance deals and current market practice.

For further study on DSCR sculpting, financial modelling, and advanced deal structuring, consider the intermediate and advanced modules in this series, or enrol in a structured project finance course through the Project Finance Institute or Corporate Finance Institute.

End of Module — Project Finance Training — Beginner Level