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## Discussion Paper

### Project finance – a risk sensitive asset class

July 2016

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*This document aims to foster debate on the future regulatory capital treatment of project finance, a form of specialised lending. It is part of a series of AFME discussion papers looking at the specific characteristics of specialised lending asset classes, their risk profiles and regulatory capital treatment.*

*The paper describes the project finance business and industry-wide default and loss data. It also explains the structures project finance lenders build into their deals to ensure they have early warning signals to avoid default situations, as well as several layers of protection and collateral acting as credit risk mitigants. Real-life case studies are included to show how these structures work in practice. The paper suggests that, given its bespoke, structured nature, project finance is ill-suited to standardised approaches to calculating regulatory capital, be they flat risk weights, slotting approaches or output floors. It nevertheless puts forward suggestions for improving the current Standardised Approach under the Basel framework, while recommending that the IRB approach be maintained for those banks who qualify for this methods.*

#### **1. About Project finance.**

Project finance involves the financing of long-life infrastructure assets with long term sustainable revenues and is generally granted to special purpose companies (SPC) created for the construction and/or operating of the assets financed. The activity of the SPC is strictly limited to the asset financed.

The segregation of the assets and their financing is completed by a security and covenant package which enables lenders to control the assets and the cash flows they generate. These financings are generally without recourse or with limited recourse to the sponsors. Cash flows generated by the assets financed are the primary source of repayment.

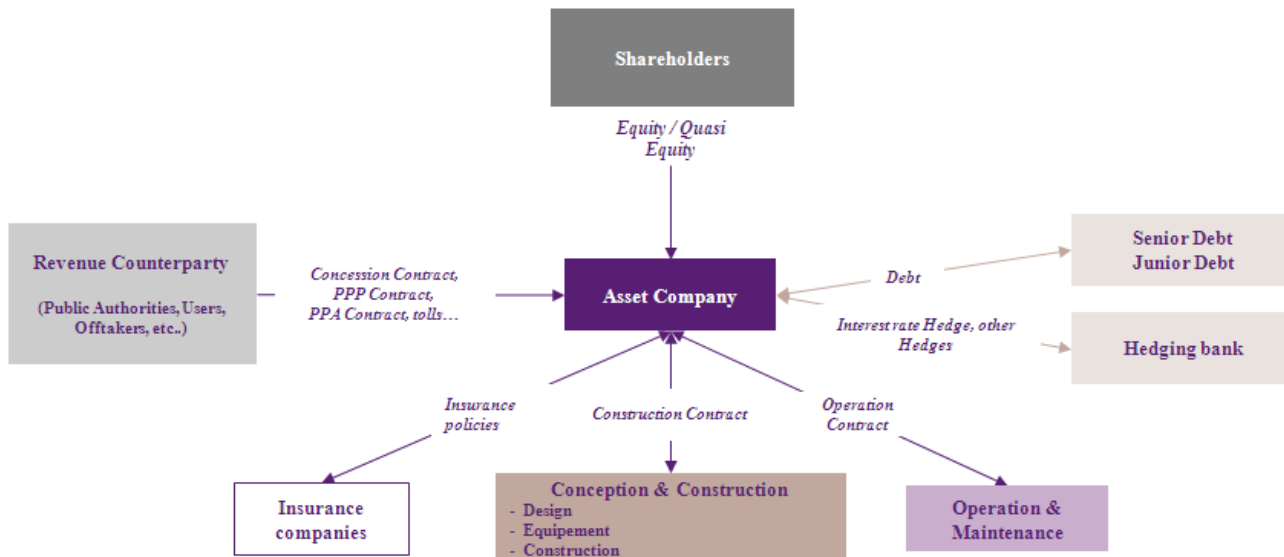
The assets financed are infrastructure assets providing essential products or services and operated in organised/regulated markets, benefiting from high barriers to entry. They therefore generate sustainable cash flows over the long term.

They comprise large long-term infrastructure assets such as transportation and social infrastructure assets healthcare infrastructure (e.g. hospitals), public infrastructure (schools, ministries, police headquarters), military infrastructure, environmental infrastructure (waste treatment plants, water treatment and desalination plants), natural resource (LNG, pipeline and storage, oil and gas offshore infrastructure,, petrochemicals, refineries, metals and mining), power infrastructure (electricity generation (renewable and conventional), transmission and/or distribution) ,and telecommunication infrastructure (cable, towers, satellite).

Project finance is performed on the basis of robust due diligence, i.e. in depth studies done by independent advisors/engineers regarding the legal, technical, environmental and social, market, tax and insurance aspects of a deal, which enables lenders to assess future cash flows and their potential variability.

The risks relating to these different aspects are analysed and mitigated through various contractual and financial structures, which are tailored and put in place on a case by case basis.

The project company enters into various contracts for the construction, operation and management of the asset, off-take (sales), supply, insurance, etc. as indicated in the graph below:



The sustainability of the contractual structure is obtained through different long term contracts (for example for O&M) and notably from shareholder commitments to remain in the project.

The project finance structure enables lenders to control the asset financed and the cash flows it generates: both cash inflows and outflows are controlled.

The control of cash flows is obtained through various collateral packages and covenants, generally comprising all or some of the following: a pledge on the shares of the companies owning the assets, direct security on assets, a negative pledge, assignments of rights under the Project Contracts and insurance policies, pledges on accounts, restrictions on additional indebtedness, restrictions on dividend payments, limitation of the activity of the borrower and limitation on its capex spending, covenants on use of cash (e.g. permitted payments).

The structure includes a “cash waterfall” mechanism (contractual and “mechanical” i.e. with defined payment flows through specific accounts) which implies that the cash flows generated are first applied to the operating and supply costs, then to the debt service, the funding of any Debt Service Reserve Account (DSRA), of any Maintenance Reserve Account (MRA), and then to the distribution account. This therefore ensures a direct allocation of cash flows to debt service and prevents any “leakage” or “misuse” of cash.

The aim of the structure is therefore to control all the revenues of the borrower (revenues of assets operated/disposal proceeds) and to limit the cash which could “leave” of the company, via e.g. additional debt, additional assets or investments or dividend distributions, in order to maintain the level of risk of the project. The package of securities and covenants aims to control the different items of the balance sheet items (equity, debt, assets) and of the cash flow generation.

Project finance can be contracted, partially contracted or merchant: there can be contracts regarding the off-take (sales) of the production, covering price and volume risk, and supply contracts.

Project finance benefits from “cushions” or layers of cash flows as lenders grant amounts of debt lower than the expected discounted cash flows, measured by different cover ratios:

- Debt Service Cover Ratio (DSCR), i.e. Cash Flow Available for Debt Service/ Debt Service, measured on each future year until maturity of the loan. The structuring of the deal ensures a DSCR much higher than 1, thus enabling the project company to bear a potential cash flow decrease without generating a payment default. The higher the risks, the higher the DSCR will be in order to have greater cushions to bear a possible decrease of cash flows.
- Loan Life Cover Ratio (LLCR), equal to the discounted sum of cash flows over the loan life divided by the debt amount. An LLCR above 1 means that cash flows generated by the project are able to cover debt service with a certain level of cushion which is positive.
- Project Life Cover Ratio (PLCR), equal to the discounted sum of cash flows over the asset life divided by the debt amount, thus taking cash flows generated over the whole asset life. As the asset has a longer life than the original loan maturity, lenders can, in case of a cash flows shortfall, restructure by postponing the maturity.

Lenders also adapt the level of debt granted according to the risk of the asset, and will require a higher equity proportion for riskier assets. This implies higher cover ratios allowing the project company to bear periods of lower cash flows, if any. Projects with a share of merchant risk will therefore require higher equity proportion, thus enabling higher cover ratios.

Distribution covenants imply that distributions can be blocked in cases where the DSCR (or other ratios) falls below a certain threshold, thus retaining the cash generated by the project when cash flows begin to decrease below a certain level. Covenants of DSCR can also allow lenders to take security enforcement actions if needed.

The long term nature and good visibility of revenues generated by infrastructure assets, together with the structure of the deal which ring fences the assets, providing the lender with control of the assets and cash flows, and their required allocation to the loan repayment, are the main characteristics of project finance.

## **2. Low loss rates**

S&P has collected data over more than 30 years from 35 project finance banks representing 75% of the market. Their statistics cover nearly 8000 projects and 624 defaults. The average default rate over a one-year horizon for the whole sample is about 1.5%, and the average LGD about 23%, leading to a limited overall loss rate:

	<b>ODF</b>	<b>LGD</b>	<b>Loss Rate</b>
Project finance	1,5%	23%	0,35%

(source: *Annual Global Project Finance Default and Recovery Study*, S&P Capital IQ, December 2015. (Discounted at loan rate)).

S&P shows in their study that projects exhibit default levels similar to corporate issuers with a BB rating at a 1-year horizon, and significantly better over a longer horizon; at a ten year horizon, cumulative projects' default rates are equivalent to a BBB- rating. Moreover, loss rates on projects finance are half the level of senior unsecured corporate exposures.

These statistics justify an average prudential risk weighting for project finance similar to that of low-investment-grade corporate borrowers.

S&P's statistics are interesting as they provide an indication of the average default and LGD of the asset class. Nevertheless, conclusions by region and sector cannot be drawn on the basis of these figures, as these two criteria are not by themselves sufficient to explain the risk on a project finance transaction. Risk depends on a higher number of criteria and loss rates vary depending on the specific characteristics of a deal. It is therefore important to use tailored approaches to measuring risk that will be different to an average or standardised risk weight.

Other data sources show similar (or better) default and loss characteristics to the S&P data referred to above:

	ODF	LGD	Publication date	Number of banks /investors	Period observed	Number of projects	Number of defaulted project	Number of defaulted projects and solved projects	Discount rate
<b>S&amp;P</b>	1.50 %	23.4%	December 2015	35	1987-2014	7959	624	377	Loan rate
<b>GCD</b>		16%	2016	40	2003-2013			255	Risk free rate
Moody's	1.54 %	19.6%	17 March 2016	50	1990-2014	5880	425	226	Loan rate

### 3. The proposed SA approach

We calculated the risk weights which would result from the historical default rate and LGDs (from the S&P data above) using the A-IRB formula. On this basis, the Basel Committee's Revised Standardised Approach proposal would imply a risk weighting of 2x or 1.3x higher than what would be calculated with observed default frequency and LGDs.

RW based on historical data	SA proposal	SA proposal/ RW with observed data
75%	150%(construction phase) 100% (operational phase)	2x, 1,3x

*RW calculated with an assumption of an average life of 5 years.*

The revised SA proposals thus seem overly conservative.

Moreover, while projects can default for a number of reasons, there is no evidence to show that projects in the construction phase are riskier or more likely to default than those in the operational phase and the proposals for construction phases are even more penalising.

***Too much simplicity in capital requirements can have negative impacts:***

- Under the proposed RSA, the same RWA would apply to transactions of very different levels of risk. This can lead to the choice of the riskiest transactions as they will have higher margins for the same amount of RW. As a result, decision making by banks between transactions of different levels of risk would be biased and the quality of banks' portfolios over time would deteriorate. Conservative structuring (as described) would not be incentivised.
- RWA is a key parameter in the allocation of resources by banks. The current RSA proposal runs the risk of rendering banks' project finance activities uncompetitive and banks may leave this market because of increasingly lower returns on equity.
- As a result, these activities may migrate into the unregulated sector.
- The current RSA proposal would strongly and negatively impact the project finance activity of banks, with negative consequences on the real economy, in both developed and emerging countries, implying a strong reduction of the volumes financed and a high increase in the cost of financing of infrastructure.

In conclusion, RW levels (under all approaches) should adequately reflect the risk profile of these loans which are essential for the real economy in both developed and emerging countries, particularly where market based alternatives still have to develop.

#### **4. Underlying structures and how they contribute to lowering the risk profile of project finance**

***Lenders benefit from tools that enable close supervision and management of the exposure***

- Project finance relates to infrastructure assets, which have long lives and deliver essential services or products, such as electricity, health care or transport services, etc. These deals thus provide cash flows with a good visibility over the long run.
- Infrastructure assets generate cash flows over their long asset lives. As the debt is lower in amount and shorter in tenor than the anticipated future cash flows, a double cushion materialises through the positive DSCR, LLCR and the PLCR.
  - In the case of a cash flow shortfall on a short period, cash is effectively "trapped" thanks to distribution limitations; moreover, the DSRA means the project can bear periods of decreases in cash flows.
  - In the case of a longer period of decrease in cash flows, the "tail" period between the loan maturity and the end of the asset life, enables lenders to restructure by postponing the loan maturity, resulting in no or limited loss.

- In addition to the above, as the underlying assets have long lives and deliver essential products/services to the economy, cash flows will generally return to an average trend after periods of temporary economic difficulty or oversupply.
- Given the limitation of the SPC's activity to the asset financed, the structure ensure that the asset's cash flows are prevented from being dedicated to other uncertain or riskier activities or to other investments that could generate negative cash flows and thus reduce the debt service coverage, leading to potential defaults and losses.
- The limits placed on indebtedness ensure that no material additional debt can reduce the share of cash flows dedicated to the lender's debt repayment.
- These various covenants and cash traps, DSRA, etc. are all mechanisms which enable lenders to be rapidly informed of any potential degradation of the project and to bear/manage periods of lower cash flows. In case of lower cash flows, if the DSCR is lower than the lock up level, excess cash generated after debt service is trapped in the project company. In other words, it cannot be distributed to shareholders. It therefore enables the project to progressively build up cash accumulated and bear periods of lower cash flows. Also, the DSRA is a reserve account generally equal to 6 months of debt service, allowing for the service of debt during periods of tighter liquidity.

***Powerful levers are available to lenders to positively turnaround default situation***

- Thanks to the delegation of contract or direct agreements, in case of any issues during construction or operation phases, lenders can step-in the project and renegotiate construction /O&M/Off-take contracts. If needed, they can terminate the existing contracts and employ new contractors, thus limiting potential losses if any.
- Ring fencing ensures that the SPC is isolated from any sponsors bankruptcy.
- Covenants and limitations enable lenders to control the cash flows that come "into" the project company (thanks to delegations of revenue contracts, insurances, pledged accounts, etc.) and that could "exit" the project company (thanks to limitations of indebtedness, investments, asset disposals, on distributions, etc.). This enables lenders to control the risk taken.
- The security package and notably the share pledge, the delegation of contracts, step in rights, and the "tail" period also enable a favourable recovery process in case of default.
- The exit of default may take on different forms such as a restructuring, loan sale or project company sale. In all cases, the recovery is based on the underlying future expected cash flows.
- As they benefit from a pledge on the SPC shares, lenders can, in case of a default, enforce their rights and possibly sell the project company (and thus receive the proceeds from the value of the debt and of the equity. Debt sold together with equity has a higher value than debt alone).
- The share pledge and security on the assets also lend a certain negotiation power to lenders. Sponsors generally support the project in case of a shortfall in cash flows in order to avoid the enforcement of their securities by the lender (to avoid sponsors losing their equity).

- In the case of default, and given project finance generally benefits from this “tail” period (remaining asset life after debt maturity), the loan can be restructured and maturity postponed, with cash flows generated over the remaining asset life being used for the full debt repayment. Restructuring can also include support from the sponsors (as mentioned above) which can partially prepay the debt in order to have a level of debt more sustainable over the long term if necessary.

***Risks of project finance portfolios are diversified***

- The project finance asset class benefits from a good diversification of risk given the many types of projects financed in different countries, sectors, with cash flows of different natures benefitting from contracts or not, etc.

**5. Alternative proposals for project finance under the Revised Standardised Approach:**

The implied Risk Weight of 75% calculated on historical data (see above) should be seen in comparison to the unsecured corporate Risk Weight of 118% which would result from equivalent corporate data with the following assumptions: 1.8% PD, 45% LGD and 2.5 years duration<sup>1</sup>.

**Accordingly, the implied RW for project finance should therefore be at least 36% lower than unsecured corporate RW in the revised Standardised Approach.**

Alternatively, in the Standardised approach for credit risk, a **simplified slotting methodology** could be developed for project finance based on a couple of basic criteria including for instance:

- Long term offtake contracts (including fixed prices and volumes);
- Ratios (DSCR/LLCR and residual asset life after loan maturity);
- Construction risk (after mitigating elements/securities);
- Country risk; (after mitigating elements/securities/covers);
- Parent (Sponsors) quality
- Seniority.

**This would provide an improved, although still very simplified framework for project finance exposures under the Standardised approach compared to current Basel Revised Standardised proposals. Nevertheless, such an approach would only be appropriate for the Standardised Approach where simplicity is paramount and would require recalibration (compared to the existing slotting approach under the IRB) to better reflect observed losses. The best way to take into account project finance characteristics remains an internal models approach for firms under the IRB.**

**6. Alternative proposals for project finance under the new IRB proposals**

As shown in the previous sections, specialised lending is by definition a non-standardised business. Under any form of standardised or slotting approach to capital requirements, it is near-to-impossible to design a method that is sufficiently risk sensitive and recognises the value of the different types of

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<sup>1</sup> Project finance exposures would tend to be of longer duration; a more precise comparison could be made by using  $m = 5$  years.

underlying structures and collateral types. Flat risk weights or risk weights that depend on only a few risk drivers are simply not appropriate for this business type which is largely performed by IRB banks.

If the same risk weights apply to transactions of very different risk levels, banks' decision making might become biased towards higher risk transactions which have higher levels of return for the same amount of regulatory capital. In such a case, the quality of banks' portfolios would over time deteriorate and the activity may increasingly shift into the unregulated sector

Slotting approaches, while more risk sensitive than standardised, flat risk weights, are not a panacea. First of all, slotting is a form of "internal approach" and will not solve differences in risk weighting between firms *per se*, as it requires internal assessments and calibration<sup>2</sup> or would need to be mapped on the basis of internal models in any event.

If not mapped with internal model RWAs, the justification behind how a slotting approach is calibrated is likely to be difficult, as it includes both probability of default and loss given default concepts without distinguishing them. Back testing would also be difficult, if not impossible, and the calibration of expected losses would also be challenging. Slotting might therefore create an illusion of greater harmonisation (i.e. the same risk weight for two transactions, but not the same risk for the same risk weight) but in fact results in a less precise risk assessment.

**The internal modelling of risk is the most precise and risk sensitive approach and should be retained for specialised lending.**

## 7. Case studies

We present here a number of project finance case studies so as to illustrate the practical benefits and function of the underlying structures in these deals in avoiding defaults and maximising recoveries.

### Case study 1

*Satisfactory management of construction issues thanks notably to close monitoring by the lenders, sponsor support, performance bond payment, maturity postponement. Full recovery anticipated.*

Background:

- Bank provided senior debt (and interest rate hedging) to a PFI/PPP (availability based) project to build and operate a number of buildings for one of the UK emergency services. SPV owned by experienced equity investors and construction / O&M contractors also experienced entities.
- Total senior debt funding typical for accommodation PFI at 90% gearing, term loan with availability period of c. 2 years, during the scheduled construction phase, and repayment profile of 24 years (leaving a 1 year tail).

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<sup>2</sup> As the EBA has recently recognised in its [final draft RTS on assigning risk weights to specialised lending exposures](#) where firms are given the flexibility to assign (internal) weights to the different criteria used to determine a slot.



**What went wrong:**

- Construction contractor experienced cashflow issues, relationships with sub-contractors became strained and staff attrition rates increased. Construction programme started to fall behind schedule
- Became clear that key construction milestones were going to be missed.
- Default under the Project Agreement a possibility

**Outcome:**

- Given early warning bank measures and bank controls in loan and project documentation the bank was able to sideline equity to take a lead in the restructuring of the project.
- It was determined, that best chance of maximising recovery and delivering the project was to build out (i.e. a work out rather than a sale)
- Given the construction delays and remediation required on site, the total cost to complete construction rose above original FC capital cost estimates.
- Additional cost to complete was met by equity & authority contribution, surety (performance bond) pay out & additional senior debt.
- Term facility was restructured and extended
- Bank was able to co-ordinate the recovery (using a specialist internal team) and installed an interim manager to look after SPV interest on the ground and closely monitor progress and application of payment mechanism to ensure subcontractors were paid in a timely fashion.
- All buildings ultimately built and delivered to the authority and concession remains in operation.
- Project is performing and it is anticipated that a full recovery of senior debt will be made.

Conclusion:

- The structural features of project finance ensure early warning of issues and allow affirmative action to preserve future cashflows and maximise recoveries.
- Features such as (i) strict conditions for facility utilisation (e.g. certified costings) (ii) regular technical advisor construction reports (to assess timely progress and build quality) (iii) draw stops (preventing further drawings during defaults) (iv) direct agreements with key contractual parties (allowing direct discourse with key parties) (iv) credit enhancement (e.g. performance bonds during construction) and (v) loan tails (which provide the ability to reprofile debt), among others, allow timely intervention, loss mitigation and effective workout.
- Default can be avoided (as it was in this case) as the key contracts can be “preserved” (e.g. Project Agreement under which the revenues / receivables are paid) and underperforming parties replaced.

Case study 2

*Robust structure and close monitoring by lenders resulted in project overcoming the sponsor’s bankruptcy, and a dispute with the off-taker (buyer of output) regarding the cost pass-through principle was resolved, thus enabling the project to return to a sound position.*

Background:

- In 2008, the bank provided a non-recourse project financing debt to finance the construction and operation of a combined wind and diesel/biofuel energy generation system providing power to the entire island of Fajro, essentially from renewable sources. This transaction is ring fenced by an extensive security and covenant package, including various ‘standard’ non-recourse finance features like a pledge on shareholdings in the Borrower, step-in rights with relevant parties under contracts. The documentation is governed by English law.
- A consortium comprising of Greenworld Assets Ltd. (a 100% subsidiary of Greenworld Ltd (rated BBB+ by S&P, July 2008), the turbine manufacturer Alpha (BBB+, March 2008) and the construction company Beta (A-, February 2008) incorporated a SPV under the name of Projectasset (“the Project”). The Project will build, own and operate the power generation system.
- Greenworld holds 90% of the Project shares, while Alpha and Beta holding each 5% of Greenworld. In 2008 Greenworld was a large and experienced renewable project developer delivering solutions for renewable energy (solar energy, wind energy, bioenergy) and carbon credits, employing around 1,000 professionals in over 20 countries across the world.
- The Project entered into a 15 years Power Purchase Agreement (“PPA”) with FEDC (FEDC, the offtaker; BB, April 2008) for the sale and purchase of electricity. FEDC is 100% state owned and has the exclusive right to supply electricity on the Fajro island.
- Pursuant to the PPA, price risks (i.e. fuel prices, currency & interest rate risks and changes in operational expenditures) as well as capital expenditures will be fully passed through to FEDC within the tariff structure. However, as a result of the project, the electricity price for the inhabitants would decrease compared to electricity prices at that time.

- The aggregate project cost was projected at USD 60mln (including construction costs, financing fees, interest during construction, start-up costs, other costs and contingencies), financed by approx. 20% equity and 80% senior debt. The senior project loan tenor was 15 years, excluding the construction period of 22 months.

**What went wrong:**

- While the Project was still under construction, the majority shareholder, Greenworld Assets Ltd filed for bankruptcy in 2009. The bankruptcy of Greenworld had limited direct effect on the Project since all equity was paid upfront and the Project was ring fenced. The result, however, was that the Project defaulted on certain conditions of the Facility Agreement by (i) the bankruptcy of Greenworld and (ii) failure to comply with certain conditions agreed during the financial close.
- The Project was completed with a small delay and marginal cost overrun in 2009.
- Apart from these matters, the most important issue was a necessary amendment of the PPA tariff agreed in 2007 at signing, hence long before financial close (February 2009). The parameters of the tariff formula had moved unfavourably due to higher construction expenditures and increased interest rates (due to financial crisis of 2008). Operational costs (i.e. higher salary costs of seconded staff by FEDC) were also higher than anticipated. The underlying principle of the amendment was to establish a cost pass-through formula based on actual costs. Without this amendment, the PPA revenues would have been insufficient to comply with all commitments of the Project and provide an adequate buffer, as is common practice in a project financing structure. FEDC was not willing to amend the PPA.
- As FEDC was not willing to amend the PPA, the Project could not comply with the first repayment in 2010. In 2010 the Project and FEDC entered into a commercial dispute concerning the interpretation of the pricing formula in the PPA contract. The consequence was that FEDC made only partial payments to Project leading to subdued Project debt service capacity. The commercial parties decided to go for arbitration.

**Bank actions:**

- To minimize the (financial) risks for the bank, it was decided to waive the documentary default in the construction phase of the Project. This allowed the Project to continue drawing under the loan facility and complete the Project. The project documentation also protected the Project from the bankruptcy of the parent company. The share pledge and change of ownership clause at Project level prevented the transfer of the shares without prior permission from the bank which affects the sales procedure.
- In the operational phase, the bank extended the debt service obligations several times (interest and repayments) in order to prevent (i) a standstill in production, (ii) avoid bankruptcy, (iii) have time to find a solution on the PPA issue, and (iv) facilitate a transaction with a possible new shareholder. The bank sent a reservation of rights to FEDC in relation to the PPA and all invoices.
- In the meantime, the Project invoiced FEDC based on the actual cost pass-through formula estimated by the Project.
- Mid 2012 the arbiters made a final decision (after various appeals of FEDC) in favour of the Project on all points. This verdict stipulated that FEDC was obliged to pay all outstanding amounts of the last two years and to pay a tariff under the PPA based on the pass through of actual costs. In December 2012 all outstanding payments over the last two years have been paid by FEDC and the payment default of the Project was lifted.
- Since the date of the verdict, the payment conduct of FEDC has been good and in line with the outcome of the arbitration process. The Project regained a healthy liquidity position.

- In 2013 the Project was sold to a financially strong Sponsor.

Conclusion:

- The structural features of projectt fiancé can prevent a borrower from being forced to liquidate in case of a parent default.
- Corporate lending model is focused on assessing losses through assessing liquidation of the underlying collateral. In fact, project finance deals are cash flow based and are characterized by a number of specific aspects that differentiate them from standard corporate loans.
- Detailed due diligence (technical, legal, financial) and Project information undertakings as part of the Project Financing allows to assess Project risks and closely monitor the company's performance.
- Project finance structural features ensure early warning of issues and allow affirmative action to preserve future cash flows and maximise recoveries.
- The ultimate recovery rate depends on the intrinsic value of the project in the event of a default. The project value itself depends on the project design and project status (construction/operational), the project security package in place, the complexity of the project's capital structure and assets, and the predictability of cash flows that can be generated by the project. Also important is the strategic or essential nature of the project which underpins the project's ongoing servicing of financial obligations;
- These factors should not only be assessed at the inception but on a continuing basis by experienced employees as the project characteristics can change over time.

Case study 3

*Solid structure and close monitoring with early warning allowed lenders to be fully repaid in exchange for the release of their securities.*

Background:

- A syndicate of commercial banks provided senior debt to an African greenfield fertilizer project sponsored by an experienced international sponsor and a local state-owned sponsor.
- The project was expected to be pro rata funded by debt (70%) and equity (30%). The financing was structured with relatively standard project finance legal documentation.

What went wrong:

- The project encountered increasing contest by the local communities and this was amplified by national mediat. Repeat blockages at the entry gate delayed the construction work.
- Although all required authorisations to allow the construction were already obtained, almost half way through the construction phase, the project received an injunction by the central government to stop the construction until further notification.

Outcome

- Close monitoring of the construction allowed the banks to have very early warning of the worsening of the situation. Banks formed a steering committee and started to engage with all stakeholders.
- The project was structured with a fully comprehensive security package whereby the sites, the commercial contracts and the accounts where pledged in favour of the lenders.

- It was determined with stakeholders involved in the project that best chance of maximising recovery and delivering the project was to relocate to a less controversial site.
- It was confirmed that all pre-closing Due Diligence as to the construction permits was exhaustive and that the project was in its full rights to build the plant at this site.
- Lenders had a pledge vis a vis any undrawn equity yet to be injected into the project and this security provided them with a powerful leverage for recovering the amount of debt drawn so far under the financing.
- Banks were able to co-ordinate full recovery (using a specialist internal team) in negotiating a full repayment of their exposure in exchange of the release of their security to allow the change of location of project facilities.
- The project moved to another place and raised finance from local banks.

#### Conclusion:

- The structural features of project finance ensure early warning of issues and allow affirmative action to preserve future cashflows and maximise recoveries.
- Project finance benefits from a comprehensive security package giving banks senior rights in all tangible and intangible assets of the project company. Hence Banks are in a more favourable situation to ensure full recovery of their exposure at default.
- Features such as (i) strict conditions and control for amounts drawn under the financing (e.g. certified costings) (ii) regular technical advisor construction reports (to assess timely progress and build quality) (iii) draw stops (preventing further drawings during defaults) (iv) direct agreements with key contractual parties (allowing direct discourse with key parties) (iv) credit enhancement (e.g. performance bonds during construction) and (v) loan tails (which provide the ability to reprofile debt), among others, allow timely intervention, loss mitigation and effective workout.
- The above example where no loss was recorded is a demonstration of the merits of the project finance structuring approach which credit enhanced the recovery potential of banks beyond that of unsecured borrowings

#### Case study 4.

*This case illustrates difficulties during construction with enforcement of securities and a favourable outcome with no loss for the banks.*

#### 1.1. Background

Project characteristics at Signing	
Country	UK
Project	<ul style="list-style-type: none"> <li>• Construction of new schools and refurbishment of other schools</li> <li>• Operation and maintenance</li> </ul>
Sponsor	UK Contractor / PFI (Private Finance Initiative) Equity Fund
Facility / Tenor	<ul style="list-style-type: none"> <li>• Amortizing Term Loan A &amp; DSRA Facility: 25 years</li> <li>• Amortizing Term Loan B: 28 years</li> </ul>

Contractual structure	<ul style="list-style-type: none"> <li>• 28 years PFI Contract with Local Authority</li> <li>• fixed-price, date certain turnkey EPC Contract with sponsor subsidiary</li> <li>• Operating &amp; Maintenance Contract with sponsor subsidiary</li> <li>• Revenues: Fixed payments, reductions in case of unavailability of the asset or underperformance of the service</li> </ul>
<b>Security Package</b>	
Shares	<ul style="list-style-type: none"> <li>• First ranking fixed and floating charge over shares</li> </ul>
Assets	<ul style="list-style-type: none"> <li>• First ranking fixed and floating charge over all assets (ie first security over all assets)</li> </ul>
Direct Agreements	<ul style="list-style-type: none"> <li>• Between Lenders and Grantor recognising the Grantor's obligations to the Lenders' and the Lenders' rights under the Project Documents. (Similar to assignment of contracts).</li> <li>• With the EPC Contractor and the Operator establishing the Lenders' rights directly with these sub-contractors</li> </ul>
Accounts	<ul style="list-style-type: none"> <li>• DSRA (6 months) Debt Service Reserve Account</li> <li>• MRA (Maintenance Reserve Account)</li> </ul>
Insurance	<ul style="list-style-type: none"> <li>• Assignment of insurance covers</li> </ul>
Construction security package	<ul style="list-style-type: none"> <li>• Delays LDs (Liquidated Damages) payable to both the Borrower and the Grantor</li> <li>• Performance Guarantee from Parent Company</li> <li>• Performance Bond from an insurance company (A-rated) for 10% of the construction price.</li> </ul>
Law	English Law

## 1.2. What went wrong

- 1 year after closing, construction started encountering delays due to the discovery of asbestos in the schools undergoing refurbishment. All asbestos issues were the responsibility of the Grantor which had to grant extension of times and payment for additional asbestos removal costs above the contracted level.
- Contractor was not able to meet the rescheduled construction programme.
- The Grantor started disputing the reasons of the delays and refused to (i) issue Completion Certificate due to poor quality of some works and (ii) to pay Availability Payments.
- LDs were due by Contractor to the Grantor and the Borrower, and banks started withholding drawdowns requested to fund the operations of the completed schools.
- Sponsor announced financial difficulties.

- Grantor / Contractor / Borrower settled their disputes (on extension of time, LDs, availability payments), redefined again the construction program for the 5 remaining schools and extended the concession by 2 years.
- Construction continued to slip, and the financial situation of the sponsor deteriorated rapidly: its corporate banks requested the sponsor to stop supporting its PFI projects.

### 1.3.Outcome

- The project had to be completely restructured in order to fund costs overruns and enable completion:
  - ✓ Entry of a new sponsor and appointment of a quantity surveyor to manage remaining works directly with subcontractors
  - ✓ Funding of costs overruns through
    - Maturity extension
    - Cash from the existing sponsor (to be used to settlement of claims with subcontractors) in exchange for the release of the Parent Company Guarantee
    - Receipt of 60 % of the performance bonds (and subsequent release of these bonds)
    - Equity injection from new partner
  - ✓ Agreement with Grantor over a new completion program and availability payments schedule
  - ✓ The project was finally completely ahead of the PFI Contract Longstop Date. (ie before the Dead line).
  - ✓ The project was refinanced.
  - ✓ There was no loss.

### Case study 5.

*This case illustrates the case of a default of the off-taker due to liberalisation of the market. Thanks to the project finance security package, lenders were able to get equity stapled with their loans and to step in the project and appoint new management when the sponsors decided to withdraw from the project.*

*There was a favorable outcome resulting with no loss (but a profit) for the banks after a restructuring of the debt and a sale of the tranches stapled with equity and a refinancing of other tranches.*

## 1.1. Background

Project characteristics at Signing	
Country	UK
Asset	<ul style="list-style-type: none"> <li>• Power station</li> <li>• Base load asset (producing all the time)</li> <li>• Strategic asset for the country</li> <li>• Modern technology with long term compliance with environment regulations</li> </ul>
Facility	<ul style="list-style-type: none"> <li>• Senior Amortizing Term Loans</li> </ul>
Tenor	<ul style="list-style-type: none"> <li>• 10 to 20 years</li> </ul>
Contractual structure	<ul style="list-style-type: none"> <li>• Long-term Supply / Offtake Contract with utilities rated Baa1 / BBB+</li> <li>• 60% of CF covered (for 1st 7 years, decreasing thereafter)</li> </ul>
Security package	
Shares	First ranking pledges on shares
Asset	First ranking fixed and floating charge on assets (ie 1 <sup>st</sup> security over all assets)
Contract	Assignment of contracts
Pledge on accounts	DSRA (6 months)
Law	English Law

## 1.2. What went wrong

- Liberalisation of market, decrease in electricity prices
- Following several accelerated rating downgrades (linked to changing market), off-taker defaults on the contract and the contract is terminated: the plant becomes merchant, in a depressed environment, and submits a claim to the off-taker.
- A Steering Committee is appointed, as well as Lenders Advisers (legal, valuation, market)
- In order to avoid administration, Lenders and Borrower enter into a Standstill Arrangement (during which only interest will be paid) in order to discuss a Restructuring.
- Sponsors decide to withdraw from the project (due to diverging views on the Restructuring proposal).
- Steering Committee appoints independent directors.



### 1.3.Outcome:

- Restructuring is approved by all parties through a Schemes of Arrangements (75% Majority vote) and is implemented
  - ✓ Entry of a new sponsor
  - ✓ No debt write-off
  - ✓ Term loans are split in different tranches. Some of them are stapled with equity (Each Lender gets equity stapled with these loans).
- Sale of the tranches stapled with equity. Banks make a significant profit
- IPO and Refinancing of the other tranches: no loss on the remaining tranches.

Further examples:

<i>Example</i>	<i>What went wrong</i>	<i>Outcome</i>
<b><i>Natural resource deal in South America</i></b>	<ul style="list-style-type: none"> <li>- Construction cost overruns</li> <li>- Opex overruns</li> <li>- Weak sponsor</li> </ul>	New sponsor - Equity injection
<b><i>Port in Europe</i></b>	<ul style="list-style-type: none"> <li>- Lack of revenues</li> </ul>	Sponsor support in exchange of a 2-year covenant holiday
<b><i>Wind farm in France</i></b>	<ul style="list-style-type: none"> <li>- High leverage</li> <li>- Change of shareholder</li> </ul>	New shareholder - Equity injection. No default, no loss.
<b><i>Power deals in UK</i></b>	<ul style="list-style-type: none"> <li>- Refinancing risk</li> </ul>	Strong & reputable shareholders: Debt full repayment from shareholders' funds
<b><i>Rail in UK</i></b>	<ul style="list-style-type: none"> <li>- Construction. Increase of costs</li> </ul>	Termination payment by London transport (guarantor). Full recovery.
<b><i>Airport in Spain</i></b>	<ul style="list-style-type: none"> <li>-Construction delay due to administrative issues.</li> </ul>	Fully repaid with concession grantor guarantee, by decision of Regional court.

## 8. Conclusion

As the case studies above show, banks do not observe higher loss rates during construction periods because they can manage construction periods notably by the assignment of the construction contract, through liquidated damages to be paid by the constructor or performance bonds for instance.

In case the constructor fails to build the asset within the specified timeframe and other conditions, the construction contract can be terminated. However, there would first possibly be a draw stop in order to attempt to resolve the issue. The constructor can be replaced, performance bonds drawn, and the asset built anyway, generally not ending in a loss for the bank. Support from the sponsor are also frequently observed during the construction period.

Difficulties that can occur during the operational period can also be addressed by the underlying structures in place:

- Situations of oversupply (on the power market for example) can evolve: no new projects would be built on the sector and demand increase would generally enable a return to a balanced market after a few years. A DSCR above 1 and the possibility to postpone the loan maturity ensure the lender can bear low cash flows periods.
- In case of difficulties of an off-taker, the contract can be renegotiated. With the original contract price generating a DSCR above 1 (Annual Cash Available for Debt Service / Debt Service), the project can bear a reduction of the offtake contract price without any loss. If needed, the loan can also be rescheduled over a longer period.

When defaults are observed in project finance, they are usually resolved favourably, as is evidenced by the low average loss rate calculated by S&P, GCD, Moody's and other studies. In particular, this is due to the following features:

- **The exercise of security:** for example, concession grantor payment of indemnity, enforcement of performance bonds in case of issues with the constructor, etc.
- **Restructuring of debt with a possible maturity postponement:** thanks to the long term and strategic nature of the assets being financed, notably benefiting from long term concession agreements and/or long term offtake agreements, debt restructuring including an extension of the loan term is often an option to increase recoveries on the basis of cash flows generated over long asset lives.
- **Equity ownership obtained** (due notably to share pledge exercise): equity stapled with debt adds to the value of the loan which can be sold over par.
- **Sponsor support:** given the security package from which banks benefit, sponsors prefer to support the project in case of difficulties rather than losing their equity.
- **Refinancing:** other lenders can have more favourable anticipations, enabling a refinancing. Refinancing can occur also after economic difficulties are reduced and /or debt is restructured and equity injected.
- **Banks can also sell their exposures:** this would generally be done when the bank anticipates a loss rate (should they keep the loan) at least equal to the discount to be borne on the loan sale. Also, when equity is stapled with the loan following a restructuring, these loans can be sold with a higher value, possibly in excess of the banks' total exposure.