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Project Finance

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Project Finance

*Katharine C. Baragona**

I. INTRODUCTION

Every major infrastructure and energy development project involves legal, regulatory, finance, contract, tax, and ownership issues. Sponsors of development projects regularly seek the assistance of experienced financial advisors and lawyers to structure the projects' ownership, development and financing plans, address the needs of other project parties, and ensure a successful transaction. Financial advisors and lawyers assist with the drafting and negotiation of the concession arrangements, as well as the construction, financing and operating agreements, international financing arrangements, ownership vehicles, and guide the project through cross-border and multinational tax planning issues.

In most instances, the financing method employed in connection with these projects is project finance. Project finance is the term used to describe the financing of a major new project or large project expansion when the lenders place primary reliance on the revenues of the new project for repayment. Also, in project finance the lenders will use the assets and contracts of the project as security. Other terms used to describe these arrangements include, limited recourse and Build-Own-Operate-Transfer ("BOOT") schemes, although there are many variants on this theme.

Project finance is used around the world to fund all manner of large-scale infrastructure and energy projects. These projects range from pipelines and refineries to electric-generating facilities and hydroelectric projects, to other large-scale projects such as power projects, manufacturing facilities, ports and toll roads, as well as resource recovery and waste disposal facilities. Project finance transactions are extremely complex. It may take a much longer period of time to structure, negotiate, and document project financing than traditional financing, and the legal fees and related costs associated with project financing can be very high. In addition, because the risks assumed by lenders may be greater in non-recourse project financing than in conventional financing, the cost of capital may be greater than with conventional financing.

Owing to this high degree of complexity, project financing can take a number of years to complete and entail considerable expense. It is nearly always quicker, where possible, to set up financing arrangements on a more conventional basis with the backing of a creditworthy borrower.

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Financial advisors and lawyers who specialize in project finance earn their fees on the strength of their understanding of a myriad of factors that are involved in structuring and implementing a large development project, such as:

- The commercial rationale and financial basis for project financing,
- How to prepare and structure a bankable financial plan,
- Assessment of political, legal and commercial risks,
- Design of the financing mix, and
- Fundraising.

In addition, to effectively advise clients in this area, financial advisors and lawyers must understand the underlying fundamentals that comprise successful financing; and the less obvious hazards that cause some project financing plans to fail. The ability to navigate successfully through the fundamentals of project financing, on the one hand, and the peril of a large scale development project on the other, requires practical, hands-on experience regarding:

- The design of contractual arrangements to support project financing,
- Public/private infrastructure partnerships,
- Public/private financing structures,
- Credit requirements of lenders,
- How to determine the project's borrowing capacity,
- How to prepare cash flow projections,
- How to utilize cash flow projections to measure expected rates of return,
- Tax and accounting considerations, and
- Analytical techniques to validate a project's feasibility.

II. THE BENEFITS

Strictly speaking, project finance refers to the financing of long-term infrastructure, industrial projects and public services based upon a non-recourse or limited recourse financial structure, where project debt and equity used to finance the project are paid back from the cash flow generated by the project. The project sponsors are usually responsible for ensuring that the project is built and operated successfully, taking responsibility for making up any shortfalls in the project's earnings only in limited, clearly defined circumstances.

The most often cited benefits of project finance are (i) the non-recourse nature of the debt; (ii) the ability of the project's sponsors to maximize their equity leverage while maximizing any tax benefits; and (iii) the ability to provide off-balance sheet treatment.

Non-Recourse

The typical project financing involves a fixed price, fixed term loan to enable the sponsors to construct a project where the loan is completely “non-recourse” to the sponsors, i.e., the sponsors have no obligation to make payments on the project loan if revenues generated by the project are insufficient to cover the principal and interest payments on the loan. In order to minimize the risks associated with a non-recourse loan, a lender typically will require indirect credit supports in the form of guarantees, warranties and other covenants from the sponsors, their parent companies affiliates, and other third parties involved with the project.

Maximize Leverage

In project financing, the sponsors typically seeks to finance the costs of development and construction of the project on a highly leveraged basis. Frequently, such costs are financed using eighty to one hundred percent debt. High leverage in non-recourse project financing permits the sponsors to put a smaller portion of funds at risk, to finance the project without diluting equity investment in the project, and in certain circumstances, permit reductions in the cost of capital by substituting lower-cost, tax-deductible interest for higher-cost, taxable returns on equity.

Maximize Tax Benefits

Project financing should be structured to maximize tax benefits and ensure that all available tax benefits are either, used by the relevant sponsor or transferred, to the extent permissible, to another party through a partnership lease or other structured solution.

Off-Balance-Sheet Treatment

Private sector companies use project finance as a means to fund major projects off-balance-sheet. Depending upon the structure of the project financing, the project sponsors may not be required to report any of the project debt on balance sheet because such debt is non-recourse or of limited recourse. Off-balance-sheet treatment can have the added practical benefit of helping a sponsor comply with covenants and restrictions relating to borrowing funds contained in other indentures and credit agreements to which the sponsor is a party.

III. APPLICABLE INDUSTRIES/MARKETS

Project financing is used throughout the world across a wide range of industries and sectors. The funding technique is growing in popularity as governments seek

to involve the private sector in the funding and operation of public infrastructure. Private sector investment and management of public sector assets is openly encouraged by governments and multilateral agencies who recognize that private sector companies are better equipped and more efficient than governments in developing and managing major public services. As such, project finance is used extensively in infrastructure and energy development.

Oil and Gas

From the financing of oil and gas rigs to oil refineries and pipelines, oil and gas companies are increasingly using project finance as a method of reducing corporate debt by taking heavy capital investment off the balance sheet.

Mining

Mining companies use project financing techniques to fund their mining developments and reduce company debt and shareholder exposure.

Electricity Generation

As electricity markets are liberalized and government monopolies removed, private sector companies are playing a pivotal role in funding new power stations using project finance with guaranteed sales agreements. Project finance enables competition to flourish in the electricity markets, resulting in lower consumer prices and guaranteed supplies. In emerging market countries, the electricity sector is the key area of industry helping to initiate economic growth. Private energy suppliers are investing on a project finance basis through government concessions in many emerging market countries and lesser-developed countries. This investment stimulates the market, provides reliable and consistent sources of energy for industry and business, thereby increasing growth and raising standards of living. Coal, oil, and gas-fired power plants, hydroelectric, combined heat, power, and renewable energy plants are all being successfully delivered on a project finance basis around the world.

Water

Throughout the world, private sector investment and expertise are redefining the water industry. Project finance helps companies to invest on a long-term basis by modernizing existing water facilities. In addition, it provides the finances to build and operate new water plants and wastewater disposal facilities on a concession basis.

Telecommunications

The recent telecommunications boom witnessed current rapid advancement in the field of mobile telecom and a growing trend of using project finance to fund and rollout new telecom infrastructures. Given current telecom companies' debt profiles, project financing may be the way forward to fund new telecom infrastructure projects without requiring rights issues to fund investment for future development.

Railways and Metro Systems

Railways throughout Europe and elsewhere require massive and urgent investment. Project finance currently plays a central role in providing the funding required to modernize and develop new railway infrastructure. This method of funding is also being used to provide new inter-city mass transit systems; both metro and light rail.

Public Services

Across Europe, private sector companies and public authorities are entering into Public Private Partnerships ("PPP's"). Within these partnerships, concessions are granted to private sector consortiums to design, build, finance and maintain public services, such as schools, hospitals, roads, government accommodation, government services, public lighting, etc. Payments come not from the end user but from the government because of the difficulty of collecting fees. PPP's, which are a variant of the Build-Operate-Transfer ("BOT") and Design-Build-Finance-Operate ("DBFO") concepts, are widely accepted and implemented by a number of European governments.

IV. THE PROJECT COMPANY

At the center of a project finance transaction is the project company, a special purpose entity that consists of the project's sponsors who may be investors or have other interests in the project (such as contractor or operator). The project company is created as an independent legal entity that enters into contractual agreements with a number of other parties to the project finance.

Sponsors of projects adopt many different legal forms for the ownership of the project. The specific form adopted for any particular project will depend upon many factors, these include:

- The amount of equity required for the project,
- The availability of tax benefits associated with the project,
- The need to allocate tax benefits in a specific manner among the project company investors, and

- The host governments' desire to remain directly involved in the project.

There are five basic forms for ownership of a project.

Corporations

This is the simplest form of project ownership. A special purpose project company may be formed under the laws of the jurisdiction in which the project is located, or it may be formed in some other jurisdiction and be qualified to do business in the jurisdiction of the project.

General Partnerships

The sponsors may form a general partnership. In most jurisdictions a partnership is recognized as a separate legal entity and can own, operate and enter into financing arrangements for a project in its own name. A partnership is not a separate taxable entity. Although a partnership is required to file tax returns for reporting purposes, items of income, gain, losses, deductions and credits are allocated among the partners. These allocated shares are included in computing each partner's individual taxes. Consequently, a partnership frequently will be used when the tax benefits associated with the project are significant. Due to the high likelihood that the general partners will be severally liable for all of the debts and liabilities of the partnership, a sponsor frequently will form a wholly owned, single-purpose subsidiary to act as its general partner in a partnership.

Limited Partnerships

A limited partnership has similar characteristics to a general partnership. The difference is that limited partners have limited control over the business of the partnership and are liable only for the debts and liabilities of the partnership to the extent of their capital contributions in the partnership. A limited partnership may be useful for project financing when the sponsors do not have substantial capital, and the project requires large amounts of outside equity.

Limited Liability Companies

Limited liability companies are a cross between a corporation and a limited partnership.

Ownership Agreements

Depending on the form of the project company chosen for a particular project financing, the sponsors and other equity investors will enter into a shareholder

agreement, general or limited partnership agreement, or other agreement. This agreement sets forth the terms under which they will develop, own and operate the project. At a minimum, such an agreement should cover ownership interests, capitalization and capital calls, allocation of profits and losses, distributions and accounting.

V. THE PROJECT

The Concession

In the most basic form of public sector project finance, the government, municipality, or other public body awards the project company a concession granting it a "license" for exclusive ownership of a specified facility or asset for a fixed number of years. At the end of the concession, the asset is handed back to the public sector in a specified condition. The concession (sometimes known as the implementation or project agreement) is the primary contract between the government and the project company and forms the contractual basis from which other contracts are developed. The concession normally entitles the project company to build, finance, and operate the facility for a fixed period, although there are numerous other variants.

Equity: Debt Ratios

The sponsors will gain "equity" in the project company, the level of which can vary depending on the preferences and purposes of the sponsors. Strong projects with strong cash flow and low risks can be structured with a minimum of ten percent equity and ninety percent debt. Where the cash flow is less certain and the risks are higher, equity-to-debt ratios can rise up to forty percent equity and sixty percent debt depending on the financial package. It is in the interest of the sponsors to minimize their equity contributions, as equity commands a higher rate of return and is more expensive than the costs of using commercial bank debt. The lenders will always seek a comfortable level of equity from sponsors of the project company, to ensure that the project sponsors are seriously committed to the project and have a vested interest in seeing the project succeed. Mezzanine or subordinated debt may also be used from infrastructure funds or mezzanine fund providers, and is reflected in the shareholders agreement for the project company.

Funding the Project Debt

The project company looks to the commercial banks and funding institutions to fund the remainder of the project costs. Debt from these lenders is referred to as senior debt. In the event of a project default, senior debt lenders have a first right to the project's assets and cash, followed by providers of equity and

subordinated funds. Debt funding consists of either bank debt or financing from bond issues, or a combination of both. Until recently, bank debt has been the predominant source of senior debt, but bond issues are increasingly being used as a source of infrastructure finance. Bond issues have a number of advantages over commercial debt, including the ability to be “rated” by agencies such as Moody’s, Standard & Poor’s or Fitch, and to be used on more than one project. However, recent developments with Moody’s and Standard & Poor’s ratings of commercial bank debt have begun to erode this advantage.

The combination of finance utilized will vary from project to project. There are advantages and disadvantages in the use of bonds as opposed to commercial bank debt. Bank debt can have fixed or floating interest rates whereas bonds are generally fixed. Bank debt tends to allow project sponsors increased financial flexibility that can be essential if financial predictions and revenue streams vary from the predicted targets. When interest rates are high, bank debt, with its higher margins and shorter tenors, tends to be less attractive than bonds offering longer loan periods at lower interest rates. The current market of low interest rates has resulted in a high degree of liquidity amongst financial institutions, resulting in genuine competition between the two sources of finance for project funding. In addition, changes in financial appetite has seen new players enter the project finance sector with project sponsors now increasingly able to benefit from more competitive margins and longer tenors. The lender profile is also widening with mortgage banks and institutional lenders such as pension funds coming into project finance. These participants already have a long-term outlook and are used to lending on a twenty to twenty-five year basis. They are therefore more comfortable lending on longer tenors that match their portfolios.

In certain emerging markets and less developed countries, commercial lenders may not be willing to lend to a project unless a multilateral agency (such as the International Bank for Reconstruction and Development or the International Finance Corporation) is involved to cover political and other risks. The lenders may also require sovereign guarantees from the host government where the project is situated, as well as involvement of export credit agencies (such as Japan Bank for International Cooperation). In the case of developing countries and countries with weak economies, the involvement of a multilateral agency may be essential to attract commercial bank lending to the project as its involvement underpins the project and covers risks which may be unacceptable to the private sector and commercial lenders.

During the construction phase of the project, equity and debt funds are used to finance the project construction with funds generated from the project cash flow if any, covering the operation and maintenance. Lenders will normally allow a grace period for repayment of capital on the loans until the construction phase has been completed and the project is generating cash.

Once the project development phase is complete, which often includes construction, the risk profile is significantly reduced and the project enters its operational phase, overseen by the project operator. With a positive cash flow,

the project sponsors often seek to refinance the project to obtain better financing terms and lower interest rates for the remainder of the project's projected life.

VI. THE FEASIBILITY STUDY

One of the first steps in project financing is for the sponsor, or a technical consultant hired by the sponsor, to prepare a feasibility study showing the financial viability of the project. In some instances, a prospective lender will hire its own independent consultants to prepare an independent study before the lender will commit to lending funds for the project.

The feasibility study will analyze the technical, financial, and other aspect of the project, including the time frame for completion of the various phases of the project development. The study will clearly set forth all of the financial and other assumptions upon which the conclusions of the study are based. Among the following are the more important items contained in a feasibility study:

- Description of project,
- Description of sponsor,
- Sponsors' agreements,
- Project site,
- Governmental arrangements,
- Source of funds,
- Feedstock agreements,
- Offtake agreements,
- Construction contract,
- Management of project,
- Capital costs,
- Working capital,
- Equity sourcing,
- Debt sourcing,
- Financial projections,
- Market study, and
- Financial and commercial assumptions used to develop the financial model.

VII. PROJECT PARTIES

Sponsor/Developer

The sponsor of a project financing is the party that organizes all of the other parties. They typically control, and make an equity investment in the company or other entity that owns the project. If there is more than one sponsor, they will often form a corporation or enter into a partnership or other arrangement. This

way the sponsors form a project company that owns the project, and establish their respective rights and responsibilities regarding the project.

Additional Equity Investors

In addition to the sponsors, there frequently are additional equity investors in the project company. These additional investors may include one or more of the other project participants.

Construction Contractor

The construction contractor enters into a contract with the project company for the design, engineering and construction of the project. If the project is a new build project, the project company will enter into a construction agreement with a contractor who will be responsible for designing and building the project. The contract is normally awarded on a lump sum or turn-key basis where the contractor has an agreed price for project construction and bears responsibility for late completion or any cost overruns. The contractor is often a shareholder in the project company and may either retain his share after construction, or sell his stake to fellow shareholders or an external source.

Operator

The project operator is a specialized entity with practical experience successfully operating, maintaining and managing similar commercial enterprises. The operator enters into a long-term agreement with the project company for the day-to-day operation and maintenance of the project over the life of the concession. If the concession is to be handed back to a public authority at the end of the concession, a specified standard of maintenance will have been agreed upon at the start of the project.

Product Offtaker

The product offtaker enters into a long-term purchase agreement with the project company for the sale and purchase of all of the energy, goods or other product produced by the project. This agreement ensures that there is a guaranteed purchaser for the product, at a guaranteed price. Project lenders often require that a guaranteed purchaser be in place prior to any agreement to lend funds.

Feedstock Supplier

If a long-term and continuous feedstock supply is needed for the project, such as fuel for a power station, a long-term supply agreement will be entered

into. This will guarantee a fixed supply and quantity of fuel at a fixed price for an agreed period.

Lender

The lender in a project financing is a financial institution or group of financial institutions. They provide a loan to the project company to develop and construct the project, and take a security interest in all of the project assets.

VIII. PROJECT AGREEMENTS

The overall structure of the project finance transaction is set out in the contractual agreements between all of the parties. These contracts define each party's role in the transaction and clearly identify their liabilities and expected functions within the transaction. The contract structure establishes the apportionment of risks between the numerous parties. The agreements are designed to fit within the overall legal framework of the host country for the project. The agreements deal with the methods of construction, financing and operation of the facility, and agreed procedures to be implemented in the event of default, failure to complete the construction, and failure to perform during the operational period. They also cover what should happen in the event of unforeseen circumstances (such as war or earthquake).

Construction Contract

This is often called the "EPC Contract" as in engineering, procurement, and construction contract. Some of the more important terms of the construction contract are as follows:

Project Description. The construction contract should set forth a detailed description of all of the work necessary to complete the project.

Price. Most project financing construction contracts are fixed-price contracts, although some projects may be built on a cost-plus basis. If the contract is not fixed-price, additional debt or equity contributions may be necessary to complete the project. The project agreements should clearly indicate the party or parties responsible for such contributions.

Payment. Payments typically are made, with an amount held back, on a "milestone" or "completed work" basis. This payment procedure provides an incentive for the contractor to keep on schedule and is a useful monitoring point for the owner and the lender.

Completion Date. The construction completion date, together with any time extensions resulting from an event of *force majeure*, must be consistent with the parties' obligations under the other project documents. If construction is not finished by the completion date, the contractor typically is required to pay liquidated damages to cover debt service for each day until the project is completed. If construction is completed early, the contractor frequently is entitled to an early completion bonus.

Performance Guarantees. The contractor typically guarantees that the project will meet certain performance standards when completed. Such standards must be set at levels certain to generate sufficient revenues for debt service, operating costs, and a return on equity. Such guarantees are measured by performance tests conducted by the contractor at the end of construction. If the project does not meet the guaranteed levels of performance, the contractor is typically required to pay liquidated damages to the sponsors. If project performance exceeds the guaranteed minimum levels, the contractor may be entitled to bonus payments.

Loan and Security Agreement

Typically, the borrower in a project financing is the project company formed by the sponsors to own the project. The loan agreement sets forth the basic terms of the loan and contains general provisions relating to maturity, interest rate and fees. The typical project financing loan agreement also will contain provisions such as:

Disbursement Controls. These frequently take the form of conditions precedent to each drawdown, requiring the borrower to present invoices, builders' certificates, or other evidence as to the need for and use of the funds.

Progress Reports. The lender may require periodic reports certified by an independent consultant on the status of construction progress.

Covenants Not to Amend. The borrower will covenant not to amend or waive any of its rights under the construction, feedstock, offtake, operations and maintenance, or other principal agreements without the consent of the lender.

Completion Covenants. These require the borrower to complete the project in accordance with project specifications, and prohibit the borrower from materially altering the project plans without the consent of the lender.

Dividend Restrictions. These covenants place restrictions on the payment of dividends or other distributions by the borrower until debt service obligations are satisfied.

Debt and Guarantee Restrictions. The borrower may be prohibited from incurring additional debt or from guaranteeing other obligations.

Financial Covenants. Such covenants require the maintenance of working capital and liquidity ratios, debt service coverage ratios, debt service reserves, and other financial ratios to protect the credit of the borrower.

Subordination. Lenders typically require other participants in the project to enter into a subordination agreement under which certain payments to such participants from the borrower under project agreements are restricted (either absolutely or partially) and made subordinate to the payment of debt service.

Security. Often, multiple forms of collateral will secure the project loan, including:

- Mortgage on the project facilities and real property,
- Assignment of operating revenues,
- Pledge of bank deposits,
- Assignment of any letters of credit or performance or completion bonds relating to the project under which the borrower is the beneficiary,
- Liens on the borrower's personal property,
- Assignment of insurance proceeds,
- Assignment of all project agreements,
- Pledge of stock in project company or assignment of partnership interests, and
- Assignment of any patents, trademarks or other intellectual property owned by the borrower.

Site Lease Agreement

The project company typically enters into a long-term lease for the life of the project relating to the real property on which the project is to be located. Rental payments may be set in advance at a fixed rate, or may be tied to project performance.

Operations and Maintenance Agreement

The project company typically will enter into a long-term agreement for the day-to-day operation and maintenance of the project facilities. The operator company has the technical and financial expertise to operate the project in accordance with the cost and production specifications for the project. The operator may be an independent company, or it may be one of the sponsors. The operator is typically paid a fixed compensation and may be entitled to bonus payments for extraordinary project performance. Additionally, the operator may be required to pay liquidated damages for project performance below specified levels.

Product Offtake Agreements

In project financing, the product offtake agreements represent the source of revenue for the project. Such agreements must be structured in a manner that provides the project company with sufficient revenue to pay its project debt obligations and all other costs of operating, maintaining, and owning the project. Frequently, offtake agreements are structured on a “take-or-pay” basis. This means that the offtaker is obligated to pay for product on a regular basis whether or not the offtaker actually takes the product, unless the product is unavailable due to a default by the project company. Like feedstock supply agreements, offtake agreements frequently are on a fixed or scheduled price basis during the term of the project debt financing.

Feedstock Supply Agreements

The project company will enter into one or more feedstock supply agreements for the supply of raw materials. The agreements are structured on a “put-or-pay” basis; meaning that the supplier must either supply the feedstock or pay the project company the difference in costs incurred in obtaining the feedstock from another source. The price provisions of feedstock supply agreements must assure that the cost of the feedstock is fixed within an acceptable range and consistent with the financial projections of the project.

Insurance

The general categories of insurance available in connection with project financings are standard insurance and optional insurance. Insurance is obtained for all project financings and covers the most common types of losses that a project may suffer. The standard types of insurance are as follows: property damage (including transportation, fire and extended casualty); boiler and machinery; comprehensive general liability; worker’s compensation; automobile liability and physical damage; and umbrella or excess liability.

Coverage falling into the optional category is often required by the project lenders and is more expensive than standard insurance. It also requires tailoring to meet the specific needs of the project. A few of the more common types are business interruption, performance bonds, cost overrun/delayed opening, design errors and omissions, system performance (efficiency), and pollution liability.

IX. PROJECT DUE DILIGENCE AND CONSULTANT REPORTS

At the peripheral of project financing are the independent consultants. These parties are experts in various fields and, in the first instance, are engaged by the sponsors to undertake due diligence for the benefit of the project lenders. The lenders are then engaged directly by the lending group once it is identified.

Although independent consultants are generally outside the core transaction team, their findings are fundamental to the financing of the transaction. The financial advisors will cite the due diligence reports in their marketing pitches about the “bankability” of the project, and the lenders will rely upon the due diligence reports when making their credit determinations and assessing what risks are present in the project.

Independent Engineer/Technical Consultant

The technical consultant is typically asked to assess the project’s facilities, conditions and capability to meet the current and forecasted services through the term of financing for the project. The technical consultant provides professional engineering consultancy services, including assessments of the plant design and the compatibility of the design with any anticipated plant operating requirements. The technical consultant appraises the design of the engineering, procurement, and construction contractor (“EPC Contractor”), determines the consistency of the conceptual design of the proposed facilities, and evaluates how well the EPC Contractor’s design fits the characteristics of the site and the requirements in the project contracts.

The technical consultant also comments on the adequacy of proposed remedial actions to be taken by the project company and the EPC Contractor in the event that the work of the EPC Contractor falls behind schedule. The technical consultant reviews the total project cost estimate and compares the total project cost estimate to that of similar projects. The technical consultant coordinates and acts as liaison with the model auditor to review and assesses the relevant sections of the project financial model, commenting on the technical data input to the model.

The technical consultant also acts in liaison with the environmental consultant and reviews and comments upon the consistency of the project design, the EPC Contract, the Operations and Maintenance (“O&M”) arrangements, the supply arrangements, and other contractual or supplementary documents to the project performance required in the environment impact assessment.

The project is monitored by the technical consultant on a regular basis, from final design through successful construction completion. During start-up and performance testing, the technical consultant reviews detailed test procedures developed by the EPC Contractor; confirms compliance with testing criteria specified in the EPC Contract; approves data collection procedures, testing instrumentation, and plant operating and testing personnel activities throughout the plant performance test; comments on the accuracy of the EPC Contractor’s test report; and confirms successful completion.

During commercial operation, the technical consultant reviews the performance and compliance of the project operator, and reviews the O&M manuals and comments on their completeness and compatibility to those of similar facilities. In particular, the scheduled maintenance, preventive maintenance, and spare parts programs are

reviewed, together with the O&M training program and the O&M manuals. Thereafter, the consultant reports to the lenders on the training programs.

The technical consultant also submits periodic reports to the lenders, noting recurring problems and making recommendations for improving plant operations. In the event of insured losses, the technical consultant assists the lenders in determining if repair or replacement is technically feasible, and if insurance proceeds are sufficient to effect such repair or replacement and to pay all expenses of the project company during the period of repair or replacement.

Supply Consultant

The primary task of the supply consultant is to verify consistency of the upstream or fuel supply assumptions, particularly volume and quality, used in the project finance model. The supply consultant coordinates and acts as liaison with the technical consultant (and other consultants) to review and assess the availability of the relevant supply system and, to the extent available, confirm matching of transportation capabilities with the needs of the project.

Market Consultant

The market consultant provides an independent opinion to the lenders on the market position of the product sold by the contracted buyers/offtakers under long-term sale and purchase agreements. The market consultant then undertakes an independent assessment of the long-term ability of the offtakers to market or use the product, as well as an assessment of the long-term competitive pressure on the product price that the offtakers are facing in their respective relevant markets.

Shipping and Logistics Consultant

The objective of the shipping and logistics consultant is to provide an independent opinion to the lenders on the adequacy of the project's shipping and logistical arrangements in connection with the terms and conditions of the product sales and purchase agreements. In a facility that relies upon the transportation of its product by sea, the shipping consultant's scope of work will cover the loading port and terminal facilities, any contracted vessels and shipping arrangements, delivery ports and unloading terminals. The shipping and logistical consultant conducts a due diligence review to assure lenders that the project has sufficient loading and transport capacity to meet its obligations under the relevant offtake agreements.

Insurance Consultant

The objective of the appointed insurance consultant is to advise the lenders on all material insurance matters relating to the project during construction and operations. The review of the proposed insurance during construction covers the policies that have been put in place. Also reviewed is the insurance during operations, including any requirements for coverage or assignment of benefits included in the financing documents.

Environmental Consultant

The objective of the appointed environmental consultant is to provide an independent opinion to the lenders on the environmental, social, and health impact plan carried out on the project, and the extent to which the relevant environmental, social, and health standards have been met.

Model Auditor

The model auditor provides an independent opinion to the lenders on material matters relating to the financial model that will serve as the base case for the financing. The lenders use the model to evaluate the project's ability to service its debt in accordance with the terms contained in the financing documents. The model auditor's scope of work typically covers different matters, such as an analysis of the financial model in respect to model integrity, model algorithms and formulas, and the consistency of the model's inputs and parameters with the transaction documents.

XI. RISKS AND MITIGANTS

In every major development project there are risks. The extent to which these risks are mitigated impacts the cost and ability to finance the project. Some of the more common risks and methods for mitigating those risks are set out below.

Supply Risk

A supply risk exists when the feedstock supply necessary for the project's production is interrupted due to insufficient supply resources, poor design, or poor operation of the supply system. Such interruption will thereby affect the project's ability to satisfy its obligations under the sales and purchase agreements. Ways to mitigate this risk include:

- Negotiation of long-term supply agreements that provide sufficient inputs to supply the project plant at full capacity;
- Development and operation of dedicated supply sources by experienced suppliers;

- Involvement of the supplier in the core group of project shareholders assuring close coordination and mutuality of interest; and
- Obtain confirmation from an independent supply consultant as to the adequacy, availability, and reliability of supplies.

Market and Product Price

Risks affecting market and product price stem from events in the offtake buyer markets. Such events or changes may prevent the project from selling product and/or collecting payment from product sales, thereby affecting the project's cash flow generation. This also includes the risk that short or prolonged periods of depressed product prices will affect the cash flow generation of the project. Ways to mitigate this risk include:

- Confirmation, in the form of an independent consultant's report, that the market demand for the project's product is sufficient to sustain the anticipated revenues to be received from sale of the product;
- Negotiation of long-term, fixed-price, purchase agreements that provide sufficient demand to maintain plant supply at full capacity;
- An analysis of financial model sensitivities to ascertain the effects on cash-flows of various worst case scenarios;
- Diversification of re-sale markets and offtake buyers to mitigate dependence on one single market and customer, thereby enabling the project to react quicker to temporary problems in any given market and/or with any customer;
- Low breakeven levels under a variety of scenarios, which protect the project from short and even long-term problems with any of its customers;
- Subordination of supply payments to debt service to demonstrate strong support by the project's main shareholders and provide an effective mitigant against severe market conditions caused by curtailments or depressed product prices;
- Operation of the project as an efficient, low-cost producer thus allowing the project to endure periods of low prices; and
- Higher debt service coverage ratios to support the project during periods of market downturn and periods of depressed prices.

Operational

Non-proven technology, defective equipment, poor operation, or natural disasters affect the project's ability to operate at full capacity. These risks thereby affect the project's ability to meet its contractual obligations and generate cash flow. Ways to mitigate this risk include:

- Use of an experienced contractor who is, familiar with the latest proven technology and operational processes, has a track record of successfully completing projects on time and within budget, and has a successful and stable record of operation and high plant availability record;
- Engagement of an experienced technical adviser; and
- Establishment of a comprehensive insurance program with business interruption insurance.

Foreign Exchange

This category of risk relates to fluctuations in the exchange rate of currencies in which project is trading and/or borrows that may negatively affect the cash flow of the project. To mitigate this risk, revenues, costs, and debt facilities are denominated in U.S. dollars; thereby providing a natural hedge against adverse exchange rate fluctuations.

Interest Rate

Interest rate risk is the risk that interest rate variations may increase the financial obligations of the project. Ways of mitigating this risk include:

- Implement a hedging policy to manage interest rate exposure.
- Implement a hedging policy for exposure arising from contractual obligations that prohibits any speculative dealings.
- Ensure the project's cash flow is robust and not very sensitive to interest rate variations.

Political

This category of risk includes the risk of governmental action such as expropriation, war, and debt moratoriums, devaluation or other economic difficulties. It also includes third party aggression and/or regional conflict, causing interruptions to the supply sources or to the project company's ability to operate the plant or transport the product for sale. Additionally, any other interference that may prevent the project from servicing its debt in the currency and place agreed is a political risk.

Factors involved in mitigating this risk include:

- The strategic importance of the project to the host government, its desires to diversify the local economy, and the extent to which the project contributes to local gross domestic product, strengthens the country's trade balance and enhances the country's foreign currency reserves;
- The credit rating of the host country;
- Location of the host country;
- The historical track record of non-involvement in regional turmoil and domestic instability;
- The obligation of the host government to provide security at all times adequate to protect the project's property and personnel;
- An insurance program with terrorism coverage;
- A package of covenants, including a reinstatement covenant and dividend restrictions in the event that project has insufficient funds following a terrorist attack, to reinforce the management's commitment to reestablishing the plant's operations;
- The strength of the host country's economy and its parity with the U.S. dollar; and
- A history of long-standing relationships between the host country government and foreign investors.

X. CONCLUSION

Project financing is the predominant means of funding the construction and operation of infrastructure and energy projects around the world. Its usage is expanding as the private sector plays an increasingly crucial role in the provision of public services, bringing with it private sector management skills and innovation which aid the improved delivery of key services, such as power, transportation, water, telecommunications, and healthcare.

Consequently, a fundamental understanding of the basics of project finance is an important component of a well-rounded legal education.