Project Financing
Review of Mozambique LNG

Despite the COVID-19 outbreak and the unprecedented impacts the lockdown measures have had on global economic activity, one of the largest infrastructure financing deals to date (~$15bn) was closed.

£13.8bn
Loans and loan guarantees from 8 Export Credit Agencies and the African Development Bank

“the biggest private debt-raising in African history despite the pandemic and turmoil in oil markets”
Source: Financial Times

Despite the COVID-19 outbreak and the unprecedented shocks to the global economy and to oil markets, Total, the world’s seventh-largest oil and gas company, secured approximately $15 billion in project financing for the development of a large Liquified Natural Gas (“LNG”) plant in Mozambique.

In this article, we present the structure of the recent Mozambique LNG project financing deal, review the main characteristics of infrastructure project financing and finally discuss the different financing alternatives.

Africa’s largest project financing deal

Mozambique LNG – development and construction

Following the discovery of large natural gas resources off the coast of northern Mozambique in 2010, a number of major LNG projects were sanctioned for development in Mozambique. The Government of Mozambique gave the final approval for the Rovuma Basin Area 1 Mozambique LNG development plan (“Mozambique LNG”) in March 2018 which marked the beginning of the development, feasibility studies, pre-construction and construction steps of the infrastructure project (the “Construction Phase”).

1 The final financing numbers vary from $14.9 billion to $16 billion.
2 The other major LNG projects sanctioned for development in the country are the Rovuma LNG project and the Coral South FLNG project.
3 Area 1 has approximately 75 trillion cubic feet (“Tcf”) of recoverable gas.
Mozambique LNG entails the development of an integrated LNG plant which will include offshore extraction capacities, underwater pipelines, an onshore processing plant and ancillary support facilities. The construction of Mozambique LNG began in August 2019.

Mozambique LNG – operations

Once the Construction Phase is completed, the infrastructure will be operational and produce LNG, entering the “Operational Phase” of the project. Mozambique LNG is expected to become operational in 2024, and once fully operational to have a total capacity of 12.9 million metric tonnes per annum (“Mtpa”).

The project is backed by a number of long-term LNG off-take agreements, totalling approximately 11.2 Mtpa. This effectively means that almost 90% of LNG production is already sold to investment-grade buyers in Asia, Europe and the Middle East. About a third of the LNG production will be sent to Japanese utilities. The customers that have already entered into long-term agreements for LNG Mozambique are detailed in Table 1 below:

**TABLE 1: MOZAMBIQUE LNG CUSTOMERS**

<table>
<thead>
<tr>
<th>Customer (Country)</th>
<th>LNG offtake agreement amount (Mtpa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokyo Gas and Centrica (Japan)</td>
<td>2.60</td>
</tr>
<tr>
<td>Shell International Trading Middle East</td>
<td>2.00</td>
</tr>
<tr>
<td>JERA (Japan) and CPC Corporation (Taiwan)</td>
<td>1.60</td>
</tr>
<tr>
<td>CNOOC Gas and Power (Singapore)</td>
<td>1.50</td>
</tr>
<tr>
<td>EDF (France)</td>
<td>1.20</td>
</tr>
<tr>
<td>Bharat Petroleum Corporation (India)</td>
<td>1.00</td>
</tr>
<tr>
<td>Pertamina (Indonesia)</td>
<td>1.00</td>
</tr>
<tr>
<td>Tohoku (Japan)</td>
<td>0.28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11.18</strong></td>
</tr>
</tbody>
</table>

Source: Platts

Mozambique LNG - Public and Private Financing

In August 2020, amid growing concerns related to insurgency in the country, Total confirmed that it had obtained approximately $15 billion of financing of the approximately $24 billion total project costs of Mozambique LNG.

The project financing includes loans from a number of quasi-sovereign and private entities. Indeed, the financing includes direct and covered loans and guarantees provided by eight Exports Credit Agencies (“ECAs”), a loan provided by the African Development Bank (“AfDB”) and approximately $1.35 billion in uncovered debt from 21 commercial bank facilities.

With just under $13.8 billion in loans and loan guarantees, which carry an 18-year tenor, the ECAs and the AfDB provided the Mozambique LNG project with the bulk of its project debt financing. ECAs are public agencies that provide government-backed loans, guarantees, credits and insurance for export projects to private corporations from their home country. ECAs make it easier for those corporations to do business abroad, particularly in higher risk developing countries.


The Mozambique government is also providing a 5-year guarantee of $2.25 billion to pay the equity share of Mozambique state-owned ENH, if required. We present a breakdown of the loan and loan guarantee amounts granted by the ECAs and the AfDB in Table 2 below:

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4 Source: AFD, November 2019, Mozambique LNG, Project Summary Notes.
5 https://www.mzlng.total.com/about-mozambique-liquefied-natural-gas-project
6 Source: AFD, November 2019, Mozambique LNG, Project Summary Notes.
7 https://www.ft.com/content/47a4d7a7-4c6f-49de-8908-3483e30a6ebd
9 Source: AFD, November 2019, Mozambique LNG, Project Summary Notes.
10 OECD
Firstly, projects are ringfenced which means they are economically and legally self-contained. This is usually characterised by the creation of a Special Purpose Vehicle ("SPV") also called project company which carries the construction and the operation of the infrastructure project. This means that the project is off-balance sheet for the project sponsors in case the project fails.

Secondly, the project company operates at the centre of the network of project stakeholders and aims to allocate a variety of risks to the parties best suited to appraise and mitigate them. This therefore allows for effective risk-sharing between the other project stakeholders. We present a typical project structure in Figure 1 below.

The ABCs of infrastructure project financing

Having explained some of the key components of project financing through the recent Mozambique LNG example, we now discuss some of the main characteristics of infrastructure project financing in general.

Infrastructure projects sponsors tend to resort to project financing in order to deal with their long-term and capital-intensive nature. Indeed, infrastructure projects have substantial financing requirements and particularly significant up-front costs. This usually means that payoffs are seen as long-term in that stable and predictable cash-flows are only achieved in the Operational Phase of the project.

Project Finance mainly applies to large and capital-intensive infrastructure projects such as Mozambique LNG, which tend to have a finite 15-to 25-year life cycle due to time constraints such as the length of contracts (e.g. concession period) or a finite natural resource (e.g. natural gas reserves).

Total, along with the other project shareholders, benefit from using Project Finance for two main reasons.

### TABLE 2: MOZAMBIQUE LNG LENDERS – ECAS AND AFDB

<table>
<thead>
<tr>
<th>Lender</th>
<th>Loan and loan guarantees ($ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Loans</strong></td>
<td></td>
</tr>
<tr>
<td>US EXIM</td>
<td>4.70</td>
</tr>
<tr>
<td>JBIC</td>
<td>3.00</td>
</tr>
<tr>
<td>ADB</td>
<td>0.40</td>
</tr>
<tr>
<td>EXIM Thailand</td>
<td>0.15</td>
</tr>
<tr>
<td><strong>ECA-covered loans</strong></td>
<td></td>
</tr>
<tr>
<td>NEXI</td>
<td>2.00</td>
</tr>
<tr>
<td>UKEF</td>
<td>1.15</td>
</tr>
<tr>
<td>SACE</td>
<td>0.95</td>
</tr>
<tr>
<td>ECIC</td>
<td>0.80</td>
</tr>
<tr>
<td>Atradius</td>
<td>0.64</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13.79</strong></td>
</tr>
</tbody>
</table>


Notes: 1. UKEF’s financial contributions represents $310 million of direct loans to UK companies working on the project. The remaining contributions are $850 million worth of loan guarantees to commercial banks.
Project Finance is usually based on “non-recourse” or “limited recourse” financial structure where project debt and equity used to finance the project are (mainly) paid back from the cash flow generated by the project. There is no guarantee from the investors for the debt. Usually, the full repayment of the debt is required by the banks before the end of the project life.

**Infrastructure projects – main characteristics**

Infrastructure projects can be implemented in various industries, with two different revenue sources (or “ultimate funding”).

**REVENUE SOURCES**

Infrastructure projects can either be demand-based or availability-based:

1. **Demand-based projects** entitle a Private Entity to receive payments related to the usage of the project assets (e.g. toll roads).

2. **Availability-based projects** entitle a Private Entity to receive regular payments from the public sector (i.e. government and tax payers) to the extent that the project asset is available for use in accordance with contractually agreed service levels (e.g. hospitals).

**BENEFITS**

Infrastructure projects tend to share the common characteristics of being low risk, of offering investment diversification opportunity and of going hand-in-hand with government actions in promoting social and economic development.

Firstly, infrastructure projects tend to offer stable and predictable cashflows. This is due to the low technological risk as they are rarely subject to technological obsolescence. Secondly, projects with natural monopoly features tend to have high barriers to entry (e.g. high capital expenditures) which decreases unexpected challenges from competitors. Finally, infrastructure products tend to be in industries that have a strong non-elastic demand, meaning the project is not overly sensitive to price changes.

**CHALLENGES**

Infrastructure projects also present a myriad of challenges which make it unsuitable for all types of investors.

1. **Capital intensity**: infrastructure projects can present high up-front costs, a lack of liquidity and long asset life requiring substantial financing requirements;

2. **Long-term payoff**: cash flows are usually negative during the Construction Phase of infrastructure projects, which is usually associated with high risk and high costs of pre-development and construction. Cash flows then become more stable during the Operational Phase. In some cases, infrastructure projects may not generate enough revenues and would require government intervention.

3. **Complexity**: Infrastructure projects tend to be quite complex and unique in nature. In addition, a complex legal structure is usually set up to ensure a proper distribution of risk and payoffs amongst all parties involved. This leads to infrastructure projects being highly opaque to outside investors. This, therefore, makes infrastructure projects a much less liquid investment that other investment opportunities.

4. **Availability of information**: Investors may struggle to get their hands on all the necessary data and information. Indeed, government or public entities may have access to more information than private companies, leading to an information asymmetry. This can create further uncertainty for investors if they are unable to properly (i) assess the risks associated with a project, and (ii) measure the performance of their investment.

**The different financing alternatives**

The financing of large infrastructure projects such as Mozambique LNG can come from various public or private sources. The financing process requires decision making at two main levels.

The choice between public, private and public/private funding is based on several interdependent conditions such as the level of country risk or the risk associated with foreign exchange. Other key elements that come into play are borrowing costs and project management efficiency.14 On one hand, public funding implies lower borrowing costs compared with private financing. However, compared with private financing, public financing also may imply lower compliance to projected costs and deadlines and low project management efficiency. Public sector funding may also increase the political risk of the project and lead to opposing interests.15

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14 Toward a framework to assessing private vs public Investment in Infrastructure, IFC.Thoought Leadership, January 2017
15 For example, in some projects, public entities are aiming to maximise infrastructure efficiency and minimise costs, as opposed to private entities that are mainly focused on maximising their IRR.
Private Public Partnerships ("PPP")

The World Bank defines PPP as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears the significant risk and management responsibility and remuneration is linked to performance." 16

There are three main parameters that define PPP framework:

1. The type of assets involved;
2. The functions assigned to the private entity; and
3. The means by which the private entity is paid.

Based on those above-mentioned parameters, PPP contracts can take various forms such as concessions, 17 aftermerage 18 or management contracts.

PPP frameworks have proven to be a turning point in infrastructure project investments as they can help overcome some of the common challenges faced by infrastructure projects such as insufficient funds, poor planning and project selection, inefficient delivery and inadequate maintenance by the addition of private sector support.

Public financing

Public financing can take three main forms:

Direct Public financing: Public entities can finance projects through grants, equity investments and/or debt. This type of support may be required to help projects achieving bankability and financial stability. Governments can invest directly in the project through equity and/or debt instruments.

Public guarantees: Public entities can take on certain contingent liabilities in order to support projects such as revenue guarantees which can take several forms (e.g. Minimum Revenue Guarantees (MRGs), off take purchaser obligations, etc.) and other guarantees such as guarantees on debt, exchange rates, convertibility of local currency, etc.). Governments can also provide insurances and indemnities (e.g. against non-payment by state entities, for revenues shortfall or for cost overruns).

Tax incentives and other mechanisms: Tax can be used by the government as support for infrastructure projects and an incentive for private players to invest (such as tax holidays, tax credits, reduction of corporate/indirect taxes, etc.). These tax advantages can have a major impact on investment decisions and in some cases improve the Internal Rate of Return ("IRR"). Governments can also help by providing financial expertise to help enhance the infrastructure project’s credit or improve the terms and/or reduce the costs of the private financing.

Private financing - Corporate Finance

If private funding is required, one must then choose (i) between Corporate Finance or Project Finance and (ii) the capital structure and the optimal level of debt. Having discussed Project Finance above, we now focus on Corporate Finance.

Corporate Finance can be described as a series of financial operations that involves company financial planning, the raising of capital, investing and the monitoring of the investment. The main purpose of the capital raised is to enhance the overall profitability of the company and is invested to achieve organisational objectives, such as asset purchases and company operations.

The sourcing of capital is a strategic part of Corporate Finance. There is a wide range of financing tools available to corporates from fixed-income solutions (e.g. corporate or subordinated loans) to equity solutions (e.g. closed-end funds, infrastructure investment trusts ("IITs")). Mixed or hybrid solutions (meaning financing instruments that are a mix of debt and equity) exist also (e.g. convertible bonds and preferred shares). However, capital is mainly raised through equity or bank loans.

Corporate bonds bear the credit risk of the issuing entity (which can have a diversified portfolio of assets) whereas project bonds bear the risk of a specific project and thus are exposed to a higher risk. 19 Project bonds are more standardised and liquid instruments than syndicated loans and can be issued with longer maturities.

Also, direct and co-investment lending to infrastructure projects or infrastructure companies has risen as an alternative to more traditional sources of lending such as banks. Direct lending to infrastructure project requires detailed Due Diligence of the generally bespoke infrastructure project from investors which explains why this type of financing is still confined to the most sophisticated investors with sufficient in-house skills (e.g. investment teams dedicated to infrastructure). We present the key differences between Project Finance and Corporate Finance in Table 3 below:

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17 A concession means the grant by government of a right to provide a service or the use of an asset.
18 Similar to concessions contracts but under which the government remains responsible for the capital expenditures.
19 Credit risk of a single project is always higher than the credit risk of a diversified portfolio of projects.
Considering the fact that interest is a pre-tax expense, project managers might tend to increase debt levels in order to maximise the tax shield effect (higher debt induces higher interest which will reduce taxable income and thus lower the amount of tax paid up to a certain limit). However, this will increase exposure to changes in tax policies.

The optimal source of financing and the optimal capital structure depend on the project stage. Independently of the characteristics of each category of financing, the optimal capital structure is also highly dependent on the stage of the project life cycle. We present the ideal source of financing and the ideal capital structure depending on the stage of the project in Figure 2 and Figure 3 below according to the OECD.

**TABLE 3: THE KEY DIFFERENCES BETWEEN PROJECT FINANCE AND CORPORATE FINANCE**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Corporate finance</th>
<th>Project finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time period</td>
<td>Permanent—an indefinite time horizon for equity</td>
<td>Finite-time horizon matches life of project</td>
</tr>
<tr>
<td>Debt characteristics</td>
<td>Recourse: the lender is entitled to repayments from any of the borrower’s assets</td>
<td>Non-recourse or limited recourse: the lender is entitled to repayments only from the project profits or assets</td>
</tr>
<tr>
<td>Financial structures</td>
<td>Moderate debt to equity ratio; structures are standardised and easily duplicated</td>
<td>High debt to equity ratio, typically around 70%-90% of capital expenditures</td>
</tr>
<tr>
<td>Capital investment decisions</td>
<td>Opaque to creditors</td>
<td>Highly transparent to creditors</td>
</tr>
<tr>
<td>Size of financing</td>
<td>Flexible</td>
<td>Might require critical mass to cover high transaction costs</td>
</tr>
<tr>
<td>Basis for credit evaluation</td>
<td>Overall financial health of corporate entity; focus on balance sheet and cashflow</td>
<td>Technical and economic feasibility; focus on project’s assets, cash flow and contractual arrangements</td>
</tr>
</tbody>
</table>


**THE OPTIMAL CAPITAL STRUCTURE**

Finding the optimal mix between the different categories of financial instruments is a crucial step in Project Finance. Each category of financing presents some advantages and drawbacks that are worth looking to.

From the perspective of an equity holder, higher levels of debt are preferable in order to maximise the leverage effect that increases the return to equity. However, having high levels of debt increases the overall financial risk of the project by increasing the volatility of the earnings (higher debt levels require higher interest payments which reduce the earnings of company) which may lead to foreclosure of the project by the lenders to the detriment of the equity holders.

**FIGURE 2: THE IDEAL SOURCE OF FINANCING BASED ON PROJECT STAGE**

Source: Adapted from OECD
Operating gearing: Gearing refers to the company’s share of fixed operating costs.\textsuperscript{21} The higher the proportion of fixed costs, the higher the operating gearing. Companies with high operating gearing tend to have more volatile operating profits, hence a higher business risk and lower debt levels.

Dilution of Earning Per Share (EPS) and voting control: Large equity issues from new investments imply increases in the number of shares of the company or “project company. All other things being equal, a larger number of shares implies lower earnings per share and also alters the voting control of initial shareholders.

The current state of equity markets: When issuing new shares, companies have to be aware of the state of the market, which can have an influence on the cost of equity. Infrastructure projects are also likely to be refinanced.\textsuperscript{22} This can be beneficial for both lenders and borrowers. It can allow the project company to find additional sources of financing in order to cover the entire project life cycle (given the final stages of a project might not have been covered by the initial financing) while also offering advantages to lenders by allowing them to lend on shorter and more advantageous terms.

The Covid-19 crisis has deep and possibly lasting effects on the world economy and financial markets. It has, without a doubt, caused severe disruptions to infrastructure projects and could bring significant challenges for investors.

However, the financing of the Mozambique LNG project sends a strong message that, despite the uncertainty over the evolution of the crisis, institutional investors have not been deterred from new large infrastructure project financing deals and that the case for investing in infrastructure as a long-term asset expected to bring stable cash flows is still a valid proposition.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{The Ideal Capital Structure Based on the Project Stage}
\end{figure}

\begin{itemize}
\item \textbf{Gearing ratios:} Gearing ratios are a group of financial metrics that compare the level of debt with the level of equity of a given company.

\item \textbf{Re-gearing as equity value rises:} This can be beneficial for both lenders and borrowers. It allows the project company to find additional sources of financing in order to cover the entire project life cycle (given the final stages of a project might not have been covered by the initial financing) while also offering advantages to lenders by allowing them to lend on shorter and more advantageous terms.

\item \textbf{Cost:} Usually debt is cheaper than equity, which primarily can be explained by the fact that interest is paid before dividends. This order of priority is kept in the event of liquidation, which makes debt a safer investment than equity (and hence explains the lower rate of returns expected).

\item \textbf{Level of gearing:} Contrary to dividends, interest payments are compulsory. Companies have to monitor borrowing levels in order to be able to repay their obligations toward debtholders. Gearing ratios are typical measurements that can help in monitoring the level of borrowing.\textsuperscript{20}

\item \textbf{Available security:} The majority of lenders require securities against loans such as tangible assets.

\item \textbf{Business risk:} This refers to the volatility of operational profits. Companies with operating profits which are highly volatile should avoid financing through debt because of the higher risk of default they carry. Companies and/or projects bearing a high business risk are financed through a higher share of equity instead.

\end{itemize}

\begin{itemize}
\item The views expressed in this article are those of the author(s) and not necessarily the views of FTI Consulting, its management, its subsidiaries, its affiliates, or its other professionals.

\item A company’s fixed operating costs do not change, regardless of changes to revenues.

\item Refinancing is defined as the process of changing or replacing the existing lenders or terms on which debt obligations have been agreed between the project company and its lenders.
\end{itemize}