

# Project Risks

Identifying and allocating risks in international energy and infrastructure projects

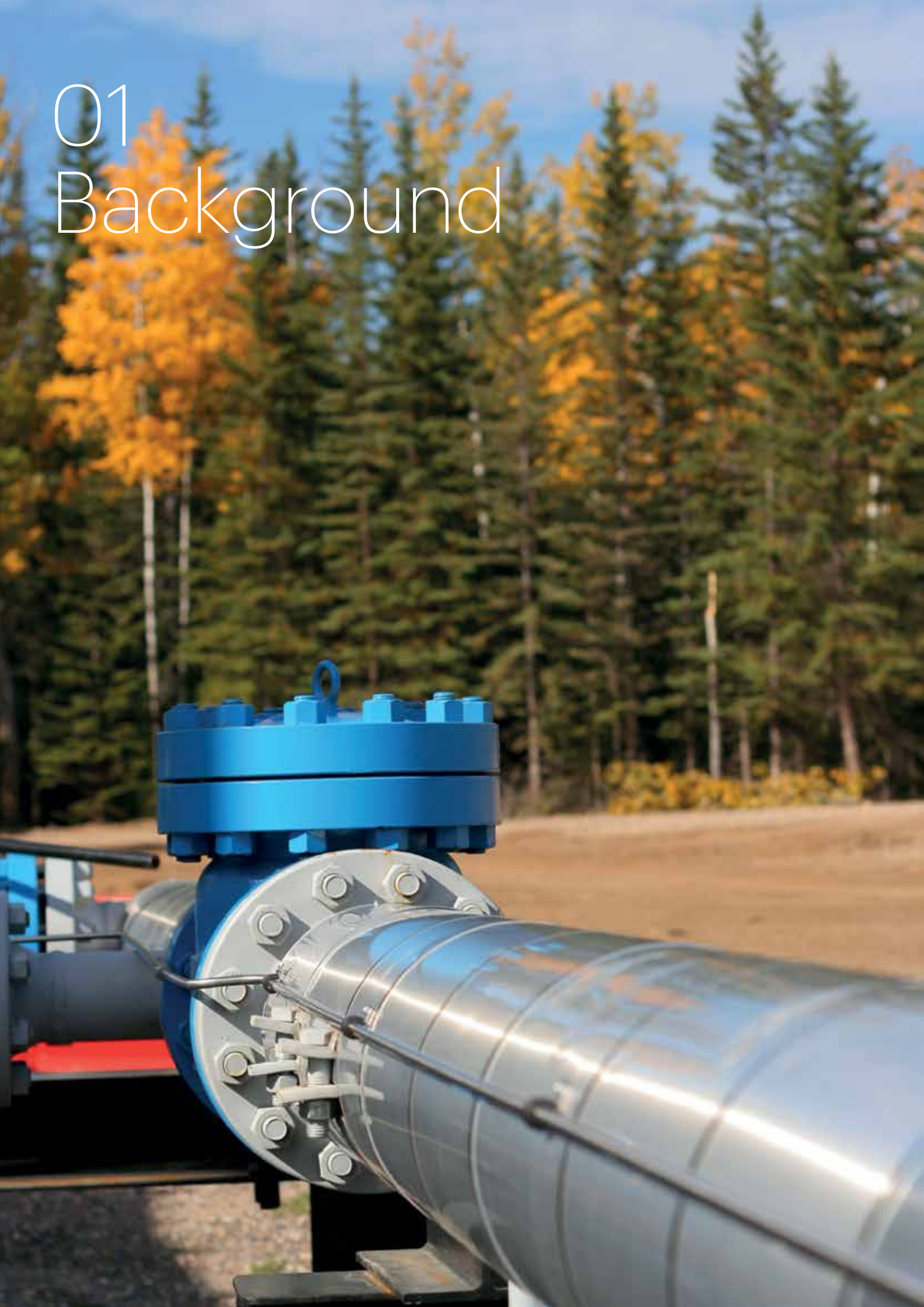
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# 01 Background



**This article analyses the key risks associated with the development and implementation of large-scale international energy and infrastructure projects. It assumes that the project will be financed on limited recourse terms, by one or more bank(s) or financial institution(s). Specifically, it looks at what makes, or does not make, a project “bankable” (or financeable) and how a project’s risk allocation must be adjusted in order to make it bankable.**

Bankability, as the name suggests, means the acceptability to the lenders of a project’s overall structure, including parties, products, markets, legal regimes and contracted documentary terms, as a basis for raising finance for the construction and operation of a project on a limited recourse basis. “Limited recourse” means the lenders to the project look primarily, but not necessarily exclusively, to the property, assets and revenues of the project as the primary source of repayment of their loans. The shareholders of a project that is financed on limited recourse terms would expect their liability for such loans to be limited to their equity in the project and other support or guarantees, typically but not

exclusively related to completion of the project, that they have agreed to provide to the lenders. Indeed, this is one of the main advantages for shareholders in raising limited recourse financing. Other advantages for shareholders might be balance sheet considerations and/or a desire on their part to share risks associated with a project with others.

There are some general principles concerning bankability that will apply to most projects. There will, of course, be other issues that apply on a project-by-project basis. This article deals with these general principles, as well as seeking to identify some of the more obvious project specific issues.

The approach in this article is primarily to consider the risks associated with a project from the lenders’ perspective. It is axiomatic that many of these risks will also be of equal concern to the shareholders. Indeed, in many cases the interests of the lenders and the shareholders will be aligned. What will not necessarily be aligned, however, is the respective appetites of the lenders and the shareholders to assume risk. The lenders, on the one hand, will earn fees and interest for assuming such risks, whereas the shareholders will look for a return on their equity, which will be many multiples of the income that the lenders will expect to earn on their loans. It follows, therefore, that the

lenders will have a considerably more conservative approach to evaluating these risks, while the shareholders will be prepared to assume a far greater degree of risks. The higher the shareholders’ expected return on investment the more risks they will generally be prepared to assume. It is also the case that, as industry participants, the shareholders will have a much deeper understanding of the construction, operational, technological, marketing and other (non-financial) risks associated with the project, which generally will make them more comfortable with assuming these risks.

It is important to understand that the essence of limited recourse financing of a project is that the risks are allocated by the developer (or “project company”) to the party that is best able to manage and mitigate these risks. This provides the greatest opportunity for effectively managing and reducing these risks. An arbitrary allocation of risk or allocating a particular risk to a party that does not have the technical, financial, administrative or managerial experience and competence to understand and manage that risk, will lead inevitably to problems. The end result of a carefully structured project utilising limited recourse financing should be that very little risk will be left with the project company. This is the ideal outcome for the shareholders, lenders and

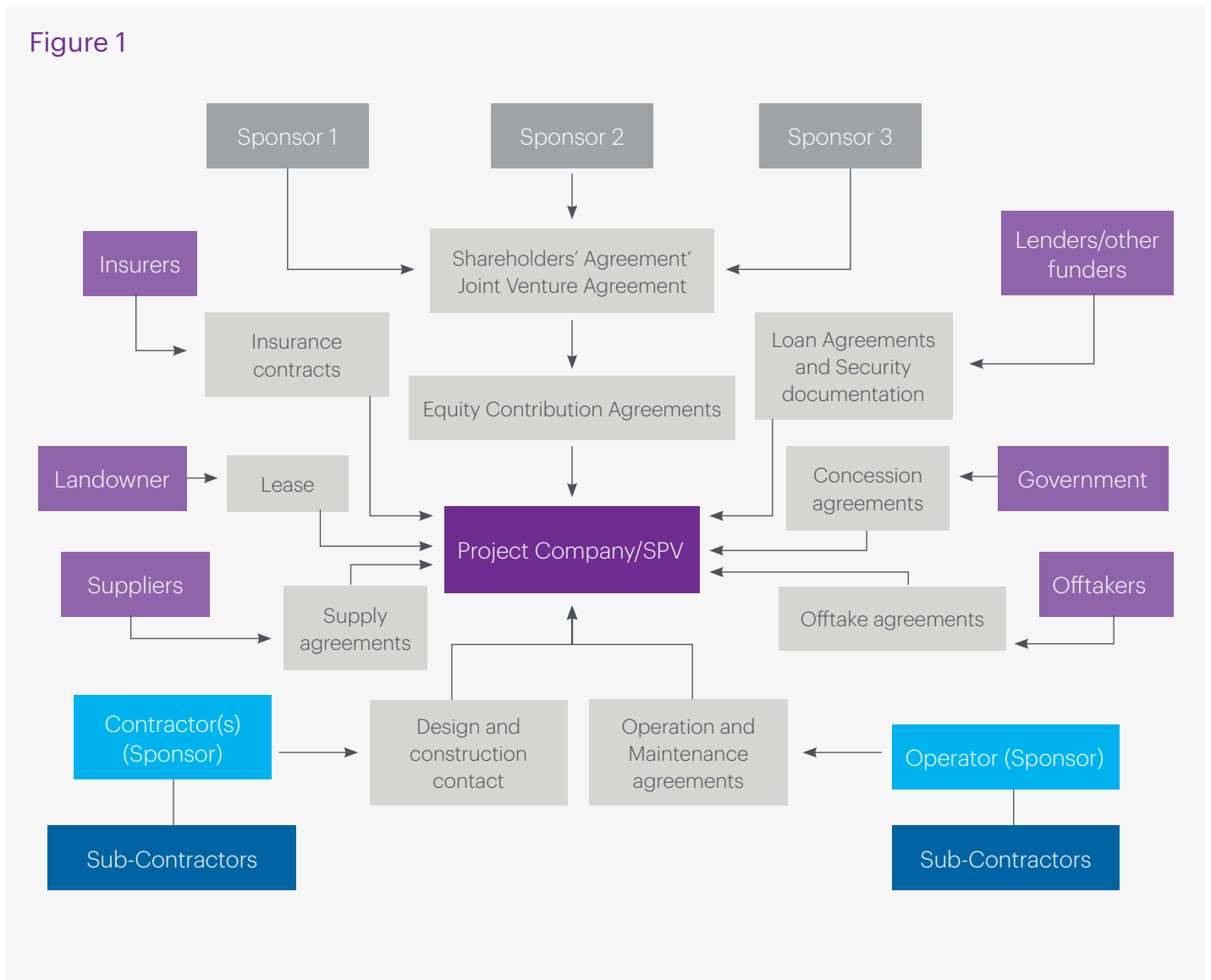
key stakeholders, as in reality, for most projects, the project company is essentially just a vehicle (often referred to as a "special purpose vehicle" or "SPV") established to develop and operate the project by the shareholders and others, including the contractor, operator,

suppliers, offtakers, technology providers and buyers, who will each assume pivotal roles in the successful development and operation of the project. If too many risks are "parked" with the project company, without back-up or support from other project parties, the end result will be

that the shareholders, to the extent of their equity (and guarantees, if any) and the lenders will end up sharing the risks brought about by such default.

This article assumes in many cases that the project is based on

Figure 1



a concession agreement granted by a government (or related party) to a privately owned and funded concessionaire. This will typically be the case for many infrastructure and utility projects, especially so-called PPP (Public Private Partnership) projects, but less so for projects in the oil and gas sector (other than upstream projects granted under production and similar licences). As a general proposition, the risk sharing in these concession-based projects is much more transparent and favourable to the concessionaire, largely due to the fact that the project in question is likely to be the development of much needed infrastructure or utilities, necessitating other government involvement and support.

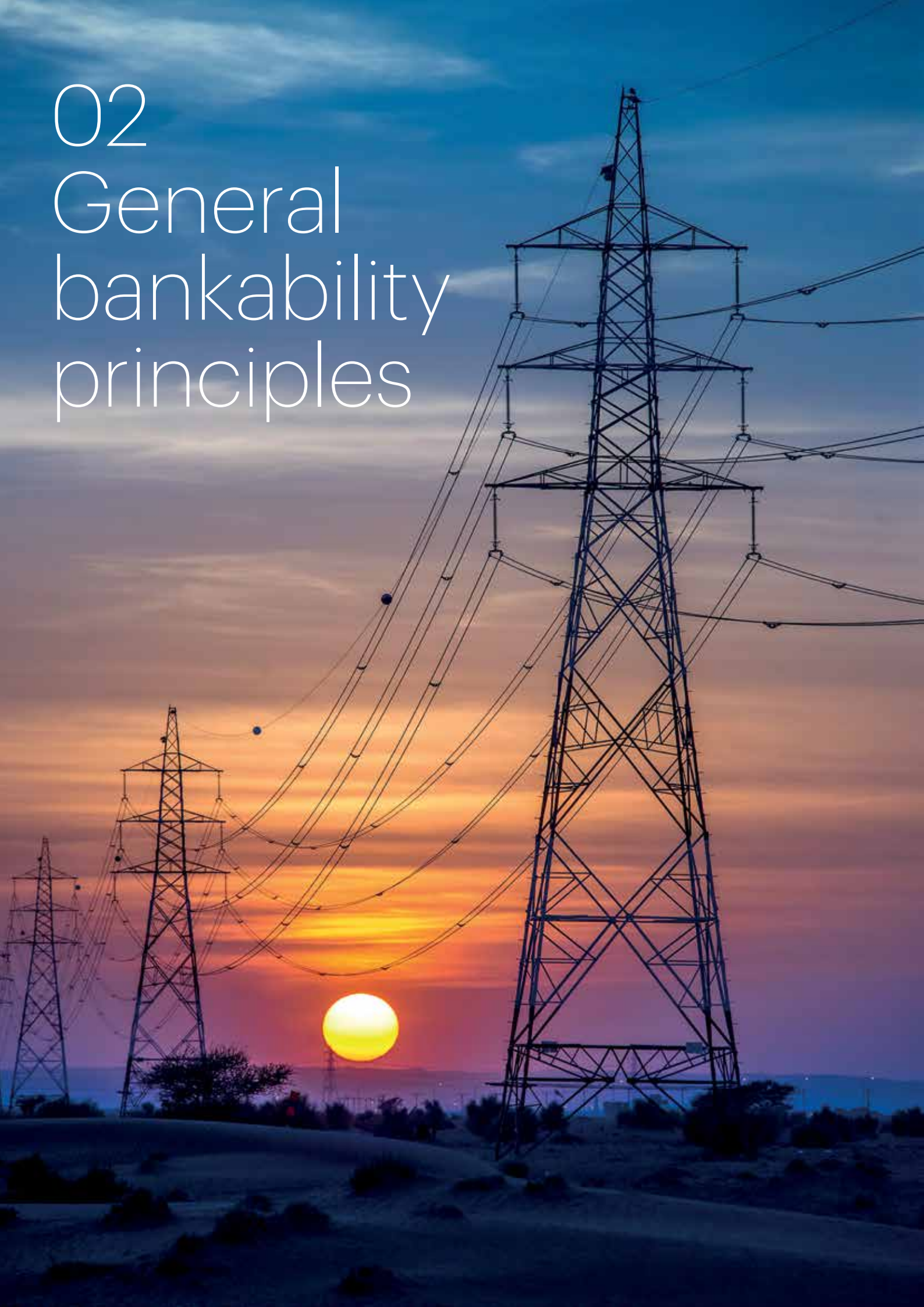
Set out in Figure 1 is a diagram showing the key parties and contracts associated with most energy and infrastructure projects. Not all these parties and contracts will necessarily appear in all projects. For example, in a typical Build, Operate and Transfer project (BOT)

the concession agreement will often include the offtake (or payment) arrangements and may also include the appropriate grant of rights and interests in the land on which the project is to be developed.

### In this article:

- “Project Company” is the company that is established by the shareholders for the sole purpose of developing and operating a project; this company is sometimes referred to as “concessionaire”; this company will be the borrower under the project financing arrangements;
- “Shareholders” are the owners of the project company acting whether as an unincorporated joint venture or, possibly, through a holding company established by them; the shareholders are sometimes referred to as “sponsors” or “developers”;
- “Government”, “Host Government” or “Grantor” is the government of the country in which the project is to be established and, where appropriate, the grantor of the concession rights;
- “Construction Contractor” or “EPC Contractor” is the company contracted by the project company to build the project facility, often under an engineering, procurement and construction contract; often the construction company will be one of (or owned by) a shareholder;
- “Operator” or “Operation and Maintenance Contractor/O&M Contractor” is the company contracted by the project company to operate and maintain the project facility; sometimes this role will be assumed by the project company, often with technical resources made available by one or more of the shareholders.
- In order to better illustrate each risk category described in this article, an example will be provided showing how such risks might arise and be allocated and mitigated.

# 02 General bankability principles





## This section reviews some general, non-project specific, principles lenders will consider to determine the bankability of a project.

### Approach to risk sharing

The lenders will expect a “fair and reasonable” approach to the sharing of risks among the various project parties. How this will be achieved will, of course, depend on detailed discussions and negotiations between the parties but, broadly speaking, the optimal approach will be that each material individual risk should be allocated to, and assumed by, the party best able to manage that risk. The lenders will not accept risks arbitrarily being allocated to the project company as the project company is not in a position to manage or allocate those risks to other parties. As noted above, from the lenders’ perspective, risks that are “parked” with the project company are, essentially, being assumed by the lenders, particularly in a default situation (and to a lesser extent, the shareholders).

#### Illustrations:

- Where a government entity is responsible for supplying fuel or utilities (typically water, fuel or power) to a project, if the government is late in delivering the utilities or, say, the fuel delivered does not match the agreed fuel specification, then the government can expect to pay compensation to the project company.
- The risk that a project may be delayed or face cost overruns is typically allocated to the construction contractor under a

fixed price turnkey construction contract under which the construction contractor will be required to complete construction of the project on time and on budget and to compensate (subject to limits) the shareholders if the project is delivered late and/or over budget. This is because the construction contractor is able to best understand and manage these risks and to price them accordingly.

- If a government, having agreed certain planning and environmental exemptions at the approval stage of a project, subsequently introduces new legislation rescinding or materially changing such exemptions with the result that the project is exposed to delays and/or increased costs, then the government can expect to pay compensation to the project company.

### Change in law

The lenders may require protection against changes in law that may have a material and adverse effect on the project or the project’s economics such that the risk profile of the project is changed in a material way. Where there is no specific government involvement in a project, then the lenders’ recourse is likely to be limited to political risk or commercial insurance which may offer some relief, or recourse to

the shareholders. However, where there is a significant government involvement in a project (whether as a sponsor or shareholder, concession grantor and/or perhaps fuel or utilities supplier), then typically the lenders will expect direct contractual commitments from the government under the concession agreement (if there is one) or a host government agreement (or similar arrangement). The scope of change in law protection that may be acceptable to a government will of course differ from project to project. Blanket protection for the project company against all changes in law that have a material impact on the project or the project’s economics would be rare. More typical is to share these risks and for the government to provide relief only against “discriminatory” changes in law, that is changes in law that directly impact the project company (and not other companies) or other companies undertaking similar (concession) projects in the relevant country (and not other companies). So, for example, a new (or increased) tax on all companies operating in a particular country will not be viewed as discriminatory but a tax only on the project company or on all companies operating similar private concessions would be treated as discriminatory.

#### Illustration:

An independent power project (an IPP) has been operating for a number

of years under existing environmental laws. A new government introduces wide ranging changes to permitted emissions from power projects which means all power plant operators must undertake expensive modifications to the plant to comply with the new laws. The project company has insufficient cash flow to finance such unforeseen capital costs leaving the shareholders to fund these costs or face the project going into default.

### Consents and permits

The lenders will require that all essential and material consents and permits required to construct and operate the project are granted to the project company at the outset of the project. The lenders will not want to take the risk that, say, an essential building permit or operating permit, without which the project cannot be built or operated, is not granted or renewed by a government body (or is renewed with more onerous conditions). Ideally, lenders will want all consents granted at the outset of the project and to have a term for either the life of the project or, at least, until the lenders are repaid in full. Where this is not possible, which is often the case, lenders will want comfort that the government in question either has a track record of granting and/or renewing such consents or is prepared to compensate the lenders if such consents are not granted.

### Illustration:

A hotel and leisure project (involving an integrated casino) is nearing completion and has applied for its gaming and liquor licences. Since the inception of the project there has been a change of government which is now insisting that local citizens must pay a sizeable entrance fee (the government is seeking to protect its citizens from the perils of gambling) as a condition for the issue of a gaming licence. Had the licence, together with detailed conditions, been obtained at the outset, it would have been more difficult, and controversial, for the government to have backtracked on its original terms.

### Equity contributions

The lenders will require the shareholders to contribute an “appropriate” level of equity to a project. What this appropriate level of equity is, will depend on many factors, including: the risks perceived by the lenders in such project, whether the shareholders are actively participating in the project (e.g. as a contractor, operator or offtaker), and prevailing market conditions. Thus, for example, if a project has little active shareholder involvement other than through equity contributions and is a project that the lenders perceive to be at the higher end of the risk spectrum, then the lenders will likely require a higher debt-to-equity ratio for that project (say, 60:40 or even 50:50).

Probably the “starting point” with most projects will be a ratio of 70:30 (or similar) and this will be adjusted according to the particular project and market conditions. A related issue will be the timing of equity contributions. Typically, lenders will want equity to be injected into a project either up front or, possibly, on a pro rata basis with their loans during the construction period. Shareholders will prefer to back-end their equity (i.e. after all the debt has been drawdown). It is sometimes possible to bridge these different expectations through the use of equity bridge loans under which the project company borrows the equivalent of the equity contributions of the shareholders from commercial banks that are prepared to lend to the project company on an unsecured basis (but subordinated to the project loans) with the support of shareholder guarantees.

### Illustration:

Lenders will not want to take the risk that a particular shareholder will not be in a position to fund its equity contribution to the project. If the lenders have concerns about the financial stability of a shareholder, they will either insist that its equity is injected up front, i.e. before the lenders fund any loans, or, if the equity is to be contributed pro rata to loans, they will insist on support through a letter of credit or guarantee from a creditworthy

financial institution or, perhaps, a parent company guarantee if the parent has a strong balance sheet.

## Dividends and distributions

The lenders will want to prevent the shareholders from taking out dividends or receiving other distributions (whether in the form of equity returns or under management, services, or similar contracts) from the project company before the lenders have been repaid. Such a position is not usually acceptable to most shareholders (except, perhaps, where it is accepted by the shareholders that the level of project risks is very high). The compromise is usually that the lenders will permit dividends and other distributions to be extracted once the project has been commissioned and has started repaying the loans; and even then, only so long as the key project financial cover ratios have been met, the debt service reserve account is fully restored, the project is not in default, and possibly some further project specific conditions or restrictions. The timing of payment of dividends and distributions to shareholders can have a material impact on the shareholders' return on equity and so these terms will be heavily negotiated between the lenders and the shareholders. Where all or part of the equity has been contributed through a shareholder loan, then similar restrictions will be imposed on the payment of interest

or repayment of these loans to the shareholders.

### Illustration:

A desalination plant has been completed and the shareholders are looking to extract dividends from the project. However, the company law in the country only permits dividends to be paid out of "distributable profits". While the company is generating significant revenues, these do not constitute "distributable profits" as a significant statutory reserve must first be built up (in effect a "cash trap"). The shareholders may have been able to reduce the effects of these provisions had they injected all or part of their equity by way of shareholder loans. The lenders insisted that shareholder loans be subordinated to their loans, but since the concept of subordination was legally untested, they insisted on "pure" equity being invested.

## Security

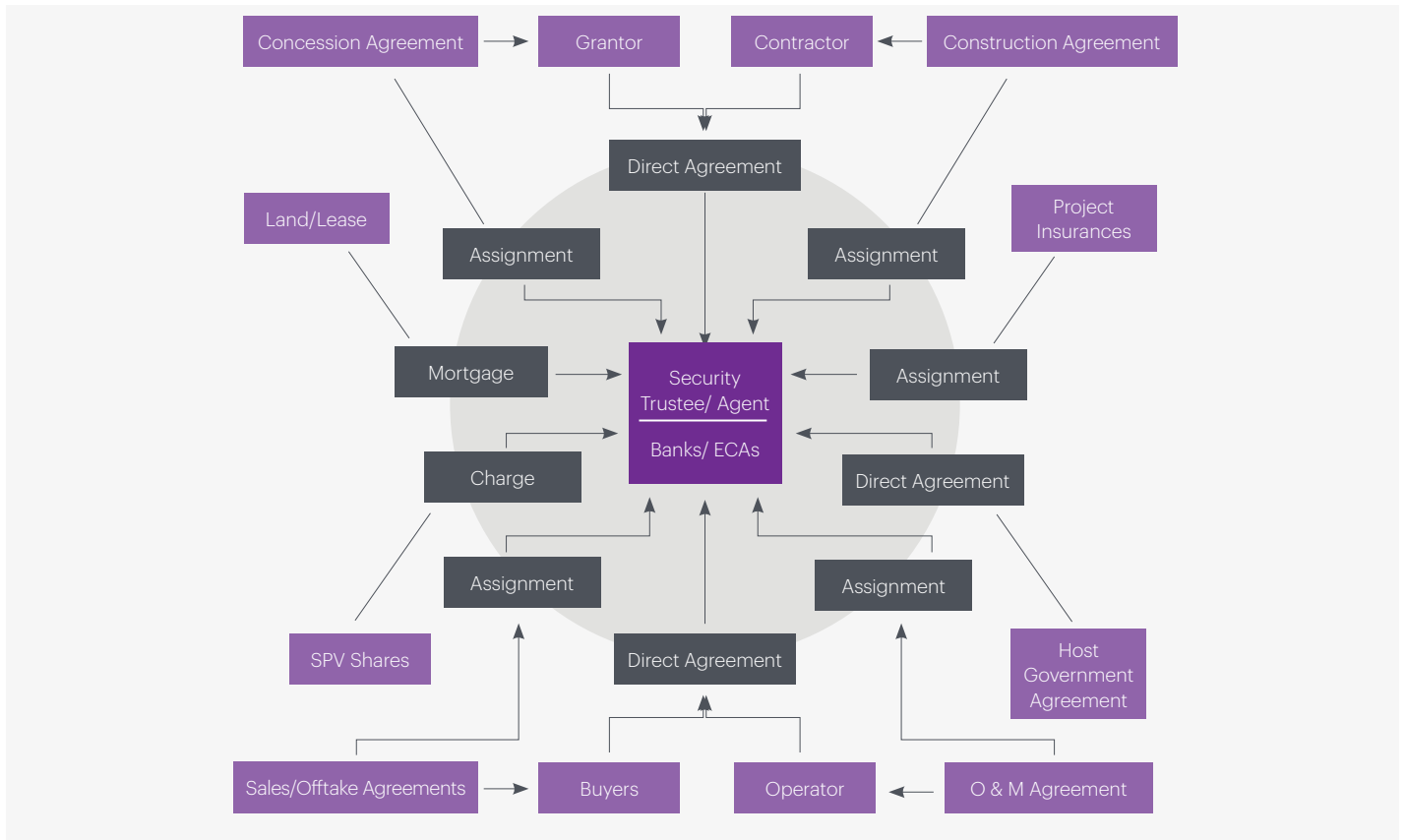
The lenders will expect perfected security interests over all of the property and assets of the project company and also over the shares owned by the shareholders in the project company. This will include the project's land, physical assets, plant and machinery, inventory, bank accounts, project contracts and commercial agreements, insurances, technology licences and other intellectual property, licences and permits, and all other rights and

interests of the project company (see Figure 2). The purpose of such security is threefold. Firstly, to prevent other creditors from acquiring rights against the project company and its assets that might interfere with the project or its operation; secondly, to enable the lenders (in certain jurisdictions at least) to take over the control and management of the project on a default; and thirdly, ultimately, to sell the project or its assets to a third party.

### Illustration:

A wastewater treatment plant is located in a country that has very undeveloped security laws. In particular, it is doubtful if effective security can be taken over bank balances or over after-acquired (future) property. Wherever possible, the solution is for the cash to be paid into offshore bank accounts where effective security can be taken (e.g. shareholder equity, insurances, receipts from offshore parties). For the after-acquired (future) property the solution may lie in supplementary pledges being taken over such property at regular intervals or upon a benchmarked value of assets being acquired. Both solutions involve complicated security arrangements and, potentially, more risks for the lenders.

Figure 2: Principal Security for a BOT project



## Cash controls and waterfalls

In all project financings, lenders will, in addition to taking security over all cash flows, want to exercise significant control over a project's cash flow. To this end, lenders will require all the project's cash flows (whether in the form of equity contributions, loans, sales proceeds, insurances, liquidated damages and other receipts) to be paid into designated bank accounts. These bank accounts will prescribe what monies can be withdrawn and for what purposes and specify any detailed conditions that may attach to any withdrawals. Typically, these accounts would include: disbursements, receipts, compensation and insurance proceeds maintenance issues and

debt service reserve accounts. Where possible, the lenders will also want these accounts to be held offshore in a jurisdiction where they can take effective security over them and insulate them from political interference or attachments. The main receipts account will typically be subject to a "payments waterfall" that will prescribe the order in which payments into this account will be applied (e.g. operating costs, lender fees and expenses, outstanding interest, outstanding principal, debt service reserve payments, loan prepayments and payments to shareholders) (see Figure 3).

### Illustration:

A telecoms project goes into default as a result of breaching certain cover

ratios. It is a term of the financing documents that, upon a default, all cash in the (secured) bank accounts can only be withdrawn with the permission of the banks. The company is seeking a release of cash to pay its operating costs but this requires the sanction of the banks. The company would have been well advised at the outset to have insisted that, even during a default, the company could use its cash balances to pay its operating costs. In certain circumstances lenders will agree to this, at least for all but the most serious of defaults and prior to any decision to demand repayment of their loans. In any event, the lenders are likely to restrict such withdrawals to approved/budgeted operating costs.

### Figure 3: Payments waterfall

- First, to meet any sums then due to the Agent, the Account Bank, the Technical Bank or the Trustee (in each case in its capacity as such and pro rata);
- second, in and towards transfers to the Operating Account in order to meet Operating Costs falling due in the next [•] days;
- third, in or towards payment of the costs, fees and expenses of the Financing Parties then due (to the extent not paid pursuant to "First" above);
- fourth, in or towards payment of interest then due;
- fifth, in or towards payment of principal then due;
- sixth, transfers to the Debt Service Reserve Account of any sums required to be paid to that account at that time;
- seventh, transfers to the Maintenance Reserve Account of any sums required to be paid to that account at that time; and
- eighth, transfers to the Distribution/Dividends Account (for payment to the shareholders).

03

# General risks for all projects



This section reviews some of the general, non-project specific risks lenders should consider that may arise during a project.

### Technology risks

Lenders are usually unwilling to assume risks associated with new technology. If new technology is involved, lenders will typically expect completion guarantees (or other forms of support) from the shareholders, to indemnify the project company against any delays, increased costs, or underperformance associated with the technology not meeting the pre-agreed design, output and technology specifications. The lenders will usually insist on a robust completion test to demonstrate that, for example, in the case of an industrial plant, it is capable of operating at the design and nameplate capacity for a period of, say, 6 to 12 months before any completion guarantees will be released. Technology proven to operate in one part of the world may not be accepted by lenders if local conditions (such as climate, water quality or other natural conditions) may negatively affect performance. If the plant can only operate at, say, 90 per cent of the nameplate capacity, then the lenders may require the loans to be reduced proportionately to re-balance the economics of the project or, in a worst case scenario, if

the project economics have become fundamentally flawed, for the loans to be repaid.

#### Illustration:

A petrochemical plant utilising significant new technology has been built and is ready for testing. The lenders have required extensive reliability tests to demonstrate that the plant can operate according to its design specifications. During testing it transpires that an essential part of one of the processes does not function as expected, resulting in significant re-engineering and consequent delays. Who will bear the costs arising from the delays? If the shareholders have provided completion guarantees, then they will assume these risks and will seek recourse from the technology providers. If not, then the project may face a default before it is even commissioned.

### Expropriation or nationalisation

Any expropriation or nationalisation of all or part of the project (whether assets or the shares in the project company) should, where there is government involvement (e.g. a government concession), give rise to a claim for compensation by the

lenders from the government for a sum equal to their outstanding loans and related costs and expenses. The shareholders will also want to be compensated for their contributed equity in such circumstances and, possibly, a sum to compensate them for foregone future equity returns (see below under termination risks). When considering a claim against a government for expropriation, it should be noted that there is always a risk that any action taken by the host government may be considered as bona fide non-discriminatory action taken in the course of its legitimate regulatory duties, in which case it may not be considered as expropriation at all. It may be possible for the lenders (or the sponsors) to mitigate such risks by acquiring political risk insurance that covers them against expropriation or nationalisation. However, these insurances are expensive and often subject to limitations.

#### Illustration:

A newly elected government, elected partly on a mandate to improve passenger rail services, terminates a number of private rail concessions on the basis that the train operators have failed to invest sufficient capital

in new (and more environmentally friendly) infrastructure and rolling stock. Low traffic volumes have left the train operators starved of cash. The loss will fall to the shareholders as the new government deems the train operators to be at fault. Some of the shareholders were protected from this loss because they bought private political risk insurance which covers the equity invested by them in the project. Others have faced their concessions being terminated (or not renewed).

### Third parties – direct agreements

Where a project is reliant on another party (e.g. a contractor, operator, supplier or technology provider), then the contractual arrangements agreed between the project company and such third parties must be sacrosanct. In other words, the project company will not be permitted to agree changes to these contractual terms, waive non-performance, or change key commercial terms without the prior consent of the lenders. These arrangements will be enshrined in “direct agreements” (sometimes referred to as “consent and acknowledgements”) entered into between the project company, the third party and the security agent for the lenders. In this way, the lenders will have a direct contractual relationship — hence the name “direct agreement” – with the third parties to enforce such restrictions as

well as requiring that such contracts, in the case of a project company default, must afford the lenders either cure rights or rights to step in and take over the project company’s rights and obligations under such a contract so as to preserve the commercial arrangements under such contract for the benefit of the lenders. These direct agreements will be in addition to the usual security that the lenders will take over such third party contracts (e.g. an assignment of the project company’s rights and benefits) and, as such, there will sometimes be a degree of overlap in their respective terms.

#### Illustration:

The project company which operates a refinery project has the benefit of a long-term fuel supply contract from a partially state-owned company. The government has granted a non-assignable guarantee to the project company covering minimum fuel supply quantities and quality over the life of the project. The project runs into difficulties and the project company extracts some concessions from the government but in exchange the government seeks concessions under its guarantee. The lenders have no direct agreement with the government and so no standing with the government to negotiate terms. The project is in default so a further default relating to a different fuel supply contract does not help the lenders. Had

the lenders entered into a direct agreement with the government with respect to such guarantee, then they would likely have been in a much stronger bargaining position with the government.

### Creditworthiness

The lenders will look very carefully at the creditworthiness of all third parties involved with a project, regardless of whether they have payment obligations towards the project company. In the case of third parties delivering services, such as suppliers and contractors, the lenders will want to be satisfied that these companies are financially robust and able to deliver the commitments assumed by them. If not satisfied, the lenders may ask for parent company guarantees and/or supporting bank guarantees or letter of credit. In the case of third parties that have payment obligations towards the project company, the lenders will want to be satisfied that these companies have the financial capabilities to meet these financial commitments over the life of the project.

#### Illustration:

The importance of creditworthy and financially robust project counterparties can be well illustrated in the example of a cross-border pipeline project for the export of crude oil from country A, through transit country B and exported from a port in country C. The upstream



exporting oil companies in country A must have the balance sheet and financial resources to support not only the ship-or-pay tariffs that will underpin the building of the export pipeline, but also the minimum availability/usage payments that will finance the development and operation of the port in country C, which relies on the export of crude oil. A financial calamity affecting the upstream exporting oil companies will adversely affect all the downstream projects and their shareholders as well as the governments in all three countries.

## Related projects

Where a project is dependent on the successful completion and/or operation of another project, the lenders to each project in the chain will want to carefully analyse, assess and allocate the risks associated with delays and/or non-completion of the other project(s). The different groups of lenders in such a chain of projects are taking “project-on-project” risk, which they will want to manage and mitigate. How these risks are allocated and mitigated will vary from project to project but will invariably involve complex intercreditor and interface issues that need to be understood and agreed from the outset of the first project in the chain.

### Illustration:

Project-on-project risks can be best illustrated with the LNG industry,

where there is a complex chain of inter-related projects typically comprising:

- the development and operation of the upstream gas field;
- the construction of the pipeline system transporting the upstream gas to a liquefaction plant;
- the construction and operation of the liquefaction plant;
- the acquisition and operation of a fleet of LNG tankers; and
- the construction and operation of a re-gasification plant.

One of the keys to managing project-on-project risks in these projects is to try and achieve common ownership in as many phases of the projects as is possible. Where this is not possible, it will be necessary to allocate the risks as between the various stages of the overall project. Where common ownership is not possible, an alternative might be for one member of the project chain to borrow funds for the whole project and on-lend the requisite funds for the other project(s) in the chain.

## Taxation

The lenders will want the project to be protected against changes in taxation (including customs duties) that may adversely impact on the economics of the project. Ideally, the

lenders would like a commitment from the relevant government not to change its taxes or introduce new taxes that will have a negative impact on a project’s economics. Unsurprisingly, most governments are unwilling to concede tax veto powers to commercial lenders. A compromise that is often agreed in government concession based projects, is that the project is protected from “discriminatory” taxes; that is, the government will not impose a project-specific tax that, in effect, discriminates against a particular project, but is not prevented from, say, introducing an industry or country-wide tax that covers all similar projects (including the affected project) in the country. This is the same concern with the more general risk of change in law (see above under Change in law). However, even this may be too much for some governments to swallow.

### Illustration:

A company operates a private port concession. The government decides to increase customs duties on certain categories of goods imported through the private port. The project company has a “comfort letter” from the government stating that “absent exceptional circumstances, it will not take any action that will have a materially adverse effect on the company”. This comfort letter is not legally binding on the government that,



in any event, is citing exceptional circumstances requiring the increases in tax revenues from the port. As a result of the tax changes and traffic volumes (and therefore revenues for the project company) are projected to fall materially. Some concession agreements will provide express protection against such discriminatory taxes.

### Finance risks

Lenders will be concerned to make sure that interest rate, currency and commodity risks of the project are hedged (where appropriate) or otherwise mitigated. In particular, given the current very low interest rate environment, lenders are likely to require appropriate interest rate hedging for the life of the loans in the expectation that interest rates can only rise over the life of the project. Where there is a mixed currency financing package, it may be that it is not possible to obtain long-term hedging for a local currency as the market is simply not deep enough. In this case, the lenders will have to settle for the maximum term the local market will offer and renew the maturity of the hedge in due course. If the majority of the capital costs for the project and the loans are denominated in the same currency as the project's income stream then there should not be a requirement for currency hedging. If there are significant currency mismatches in a project's structure, the lenders

may require that this risk is hedged or otherwise mitigated. In certain projects, particularly mining projects, commodity price hedging may be required.

### Illustration:

Financing aluminium smelter projects is always challenging. On the cost side, the reduction process of converting alumina into molten aluminium uses considerable amounts of electricity making the reduction process expensive. On the marketing side, the price of aluminium is extremely volatile and it is simply not possible to obtain long-term offtake contracts at other than market prices. The delta between the costs of production and the sale price is therefore critical in the project's economics. A way of insulating some of these risks is to link all or a significant part of the electricity price to the London Metal Exchange (LME) price for aluminium, thereby hedging the project against significant market price adjustments. Thus, the electricity provider ends up sharing some of the market price risk for the commodity.

### Environmental and social risks

Lenders (in particular development agencies and export credit agencies) will pay particular attention to the environmental and social risks inherent in the construction and operation of the project. In many developing countries environmental

laws have either just been enacted recently or are still being developed, therefore government officials and enforcement agencies are often unclear as to how such laws will be enforced. Therefore, to understand and adequately assess the potential environmental risks of a project, it is necessary to understand how the regulatory system of the country currently works, and how it may likely develop, and what mitigation measures may be possible in case of such an event, particularly as such development may result in the establishment of a more stringent regulatory policy.

Most development agencies and export credit agencies have guidelines and rules for environmental and social policies on projects in which they lend to or invest in. Many leading international banks participating in the project finance market have committed to follow the Equator Principles<sup>1</sup> for projects in which they participate. Detailed expert reports will be required to ensure that there are no negative environmental or social (e.g. population displacement or disruption) implications for the project. Shareholders will be committed to establishing environmental and social plans for the development of the project and the operation of the project must adhere to those plans throughout the life of the project.

<sup>1</sup> "Equator Principles" means those principles set out in the paper entitled "The Equator Principles – A financial industry benchmark for determining, assessing and managing social and environmental risk in project financing" dated June 2013, developed and adopted by the Equator Principles Financial Institutions ([http://www.equator-principles.com/resources/equator\\_principles\\_iii.pdf](http://www.equator-principles.com/resources/equator_principles_iii.pdf)) as at the date of this article.

#### Illustration:

Any financing of an offshore oil and gas project will need to address significant environmental risks, as the Macondo disaster in the Gulf of Mexico all too readily illustrates. In the United Kingdom Continental Shelf an added challenge facing developers and lenders alike is the UK government's insistence that developers set aside a specific reserve to cover future abandonment costs which may include dismantling the platform and towing it onshore for scrap or other uses. This adds significantly to the operating costs of offshore oil and gas projects. The lenders will, of course, want to take security over this abandonment fund but may find in some jurisdictions (such as the United Kingdom) that the fund can only be utilised for meeting the costs of abandonment and not for repaying loans on a default.

#### Insurance risks

A comprehensive insurance package is, of course, mandatory for any energy or infrastructure project. Risks may include fire, storms, earthquakes, floods, typhoons and the like. The most important cover is for the costs of rectifying the loss or damage to the project's assets. This is usually covered by a construction "all risks" policy. Further cover will usually be taken out to cover any delay in commissioning, "delay in start up" (DSU) and any interruption in a project's revenues flowing from loss or damage to project assets,

"advance loss of profits" or "business interruption" cover. Finally, there will be "third party liability insurance" to cover the project against third party claims for which the project is responsible. Lenders will take security over these insurances and will typically require all insurance proceeds to be paid into designated security bank accounts controlled by the lenders. See Figure 4 for a list of typical insurances required in each of the construction phase and the operating phase of a project.

Another issue for consideration by both the project company and the grantor is what happens if the insurances prescribed by the grantor are no longer available in either the local insurance market or are only available on unreasonable terms either as to levels of cover available or cost. Some governments have recognised for strategic projects these must be implemented even if insurances required by the grantor are not available. In these cases a grantor can act as an insurer of last resort and agree to in effect indemnify the project and/or the project company for any risks that would have been covered by the insurance market in normal circumstances. In these cases the project company would pay the appropriate level of premiums to the grantor for acting in this capacity and the grantor would provide the agreed level of cover for so long as the project company was unable

to purchase the insurance in the market place. A good example of an insurance risk that may not be available in a particular market is sabotage and terrorism insurance which in certain markets has over the years been extremely difficult to obtain. There is precedent for both shareholders and governments providing the required level of insurances in such cases.

#### Illustration:

In certain countries the law stipulates that all (or a significant part) of insurances for energy and infrastructure projects must be insured in the local market, usually with local insurers. This is a form of protection for the local insurance market. Another issue is, however, that in many cases the balance sheets of these local insurance companies is just not robust enough to underwrite multi-million dollar claims. The solution is for the lenders to require all (or a substantial part) of such insurances to be re-insured in the international market. The lenders will take security over the re-insurance contracts and the proceeds or, if for some reason security cannot be taken, enter into a "cut-through" arrangement pursuant to which all the parties agree that the proceeds of any claims under the re-insurance contracts will be paid direct to the lenders.

## Figure 4: Project insurances

### Construction phase

- Construction/ Erection “All Risks” cover.
- Physical damage to other assets such as offices, vehicles, etc.
- Transit insurance, (e.g. marine cargo cover).
- Employers, workmen’s compensation and third-party liability insurance.
- Third party liability cover.
- Environmental liability insurance.
- Delay in start-up insurance against increased costs resulting from delay caused by an insured loss (including as a result of acts of terrorism).

### Operating phase

- “All Risks” property cover.
- Physical damage to other assets such as plant, equipment, motor vehicles.
- Third party liability cover.
- Employers, workmen’s compensation and third-party liability insurance.
- Environmental liability insurance.
- Business interruption or loss of profits insurance (including as a result of acts of terrorism).

## Raw materials (supply) risks

Any project that relies on the supply of raw materials for the operation of the project will need to take appropriate steps to protect itself against those raw materials either ceasing to be available or not being up to the required specification. For a power station the key raw material will be fuel which will typically be gas, oil or coal and the project company will want to enter into a long-term fuel supply contract with a reliable and creditworthy supplier. The lenders will usually want the term to be at least the duration of the bank financing plus a tail of two or

three years. Almost as important as certainty of supply is ensuring that the fuel in question is of the requisite quality. Fuel that is not of the correct specification can seriously undermine the proper operation and economics of a project.

### Illustration:

The project company will want to protect itself against the raw material supply and quality risks. Usually this will be achieved in allocating the risks in the supply contracts. In certain cases, a “tolling” arrangement may be put in place. An example of this might be a gas fired power

station where the government (or a government controlled company) will supply the gas to the project, and the government (or other government controlled company) will purchase the power. The power purchase agreement will allocate all fuel risks to the power purchaser so that if the project company is not able to supply power owing to, say, an interruption of fuel (or the fuel not being of the correct specification), then the project company shall be entitled to be paid as if it were supplying power to the power purchaser i.e. the plant will be deemed to be “available”.

Another example of tolling projects is a refinery where the project company will simply refine the products supplied to it and deliver the refined products back to the supplier. In these cases the tolling company will expect to be insulated from raw materials supply risks as well as offtake (revenue) risks.

### Offtake (revenue) risks

Just as important as securing the raw material (supply) risk is securing the offtake (revenue) risks. For some projects that are exposed to market and/or demand risks, for example a toll road project, a port project or a steel plant with no long-term offtake contracts, the project company will need to assess and manage these risks. Not surprisingly, these projects that are exposed to market risks are more difficult to finance. At the other end of the spectrum is an independent power or water project where a utility (usually owned by a government) will contract, on take-or-pay terms, to purchase the plant's output so long as the plant is "available". For those projects that do benefit from a contractual offtake, the key elements, as with the raw materials contracts, is the term of the contract and the creditworthiness of the buyer. The lenders will want a contract matching the term of the debt plus a tail of two or three years and a buyer with a strong balance sheet. Equally important will be the pricing terms and what price risks

the project company will be exposed to (if any). The lenders will, of course, take security over the offtake contracts and require payment to be made directly to secured bank accounts.

Illustration: One of the challenges in cases of financing independent power and water projects in developing countries is that it is often the case that the state utility that is purchasing the power or water will not have a strong enough balance sheet to make the project bankable and, where government guarantees may not be available in such cases, other structures will be required to overcome these risks. In some cases it may be possible, in the case of power, to sell power direct to strong local industrial companies under long-term supply arrangements, or the utility may agree to grant security over certain revenues from key customers. Short-term letter of credit facilities covering, say, a twelve month period may also provide a measure of support. However, the more complex the offtake arrangements the more challenging it will be to put in place a long-term financing.

### Currency risks

Many projects are exposed to currency risks. An independent utility project with a local customer base or a toll road project will have revenues denominated in the local

currency, whereas all or part of its debt is likely to be denominated in a foreign currency (usually US\$). If the local currency depreciates against the foreign currency then the project will be exposed to a financial risk. Similarly, if the project is importing raw materials that are priced on a foreign currency there will be a currency risk. Hedging may be a solution, but it rarely is because of the costs involved and the lack of long-term hedging options for many currencies. The other two risks associated with currencies are convertibility and transferability. Some governments impose restrictions on access to foreign currencies and may impose limits. So a project that earns its revenues in a local currency will need consent from the government to access foreign currency. Even where a project earns foreign currency (e.g. selling minerals or hydrocarbons priced in a foreign currency), there may be restrictions on the project company transferring the foreign currency abroad. Political risk insurance cover may be available to mitigate either or both of these risks, although this can be expensive.

#### Illustration:

Currency risks impact many projects in developing countries, particularly where the local currency market is small and volatile. If political risk insurance cover is not available or deemed too expensive, then it may be possible for the project company



(or the lenders) to obtain a foreign currency undertaking from the host government or its central bank. Whilst such an undertaking may not cover the currency revaluation risk, it will usually cover the convertibility and transferability risks. Thus, the government or central bank will commit that, if the project company pays local currency to meet its foreign debt service, the government or central bank will make available the required foreign currency and permit that foreign currency to be paid overseas to meet the project company's foreign currency debt service commitments.

### Force majeure risks

The legal concept of force majeure is that a party should not be held responsible for performing its obligations under a contract where that performance is prevented by circumstances beyond that party's control. While force majeure provisions will be found in many commercial agreements, they are very rarely found in financing documents on the simple basis that an obligation to repay a loan is absolute and should not be excused in any circumstances. The way in which a force majeure clause works is that, upon the occurrence of the triggering event, if that event prevents a party from performing its obligations, then the duty to perform those obligations will be suspended for the duration of the event. Once

that event ceases then the original obligation will be reinstated to its original terms. To mitigate the consequences of a force majeure event, most force majeure provisions are drafted to create an obligation on the party seeking to rely on the force majeure clause to use reasonable efforts to mitigate or overcome the effects of the event.

Despite the prevalence of force majeure clauses in commercial agreements, the term "force majeure" has no recognised legal meaning under English law, and will only be enforceable to the degree expressly set out in the contract, therefore it is important to ensure that an express provision for force majeure events is included in commercial agreements. Such express provisions will often be drafted as a non-exhaustive list of events that may constitute force majeure. However, in some project finance contracts, such as a concession agreement with a public authority, force majeure clauses are drafted so that force majeure events are divided into two: "natural" force majeure events, which will usually comprise of a non-exhaustive list that includes acts of God, fire, drought and floods, and "political" force majeure events, which will usually comprise of a list with a set of specific events that will constitute a force majeure event, such as governmental interference, war, non-

renewal of consents and, sometimes, changes in the law. The benefit of such an approach is that the parties are able to agree on different relief options for each of the two events. For "natural" force majeure events, the affected party will be relieved of its obligations to perform under the contract, whilst in "political" force majeure events, the parties may be able to agree to have the concession period extended rather than just relieving a party of their obligations, or if the force majeure event has resulted in an increase in costs, they may agree a level of compensation. If the event is not cured within a set period, say, 6–12 months, the affected party will have the right to terminate the contract and be paid compensation (see below Termination risks).

In project financings it will be important to ensure that force majeure provisions are consistent across the spectrum of project agreements, so that the project company is not in a position where, for example, one of its raw materials suppliers can claim force majeure in certain circumstances but no force majeure relief is available under an offtake or sales contract as a result of interruption of raw materials supply. Additionally, it is important to ensure that each party understands the impact and effect of the force majeure provision. For example, where the project company



has entered into a contract with a construction contractor to build the project facility, in case of any delay that construction contractor will be liable for damages that the project company is liable to pay under the concession agreement as a result of that delay. However, in case of a force majeure event under the construction contract, which would relieve the construction contractor of its obligations, it is important to keep in mind that, unless expressly provided for, this relief will not automatically relieve the project company of its corresponding obligations under the concession agreement.

Mitigation of force majeure risks is possible for certain risks through commercial insurance (e.g. floods, storms, earthquakes, and other similar events).

#### Illustration:

An industry standard (FIDIC) force majeure definition is "Force Majeure" means an event or circumstance (i) which is beyond a party's control, (ii) which such party could not reasonably have provided against before entering into the contract, (iii) which, having arisen, such party could not reasonably have avoided or overcome, and (iv) which is not substantially attributable to the other party.

Force Majeure may include, but is not limited to, the following events or circumstances, so long as all these conditions (i) to (iv) above are satisfied:

- a. war, hostilities (whether war be declared or not), invasion, act of foreign enemies;
- b. rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war;
- c. riot, commotion, disorder, strike or lockout by persons other than the contractor's personnel and other employees of the contractor and subcontractors;
- d. ionising radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such radiation or radio-activity;
- e. operation of the forces of nature such as earthquake, hurricane, lightning, typhoon or volcanic activity; and
- f. a change in the laws of the country, or in the judicial or official governmental interpretation of such laws, made after the contract becomes legally effective.

It's interesting to note that this FIDIC provision specifically covers "change in law" under paragraph (f). In most concession agreements this would be covered under an independent regime from force majeure, with slightly different remedies.

#### Political risks

"Political risk" can be a major factor, particularly in developing countries, and can add significant costs to the project. A number of these risks have already been specifically covered in this article (e.g. change in law, currency, consents and nationalisation). There are, however, other risks that are commonly referred to as "political". For every project, it will invariably require some degree of government involvement or authorisation, and may even need further state cooperation and support during operations. Therefore, some of the most apparent "political risks" include the possibility of the state or its agencies revoking authorisations, imposing new taxes and even nationalising or expropriating the project.

For certain projects, such as those related to energy and infrastructure, given the magnitude and political sensitivity of such projects, along with the fact that the host government or agencies of the government are likely to be involved, they can rarely be treated simply as ordinary commercial developments,

albeit on a larger scale. Therefore, such projects are an area where commercial, legal and political considerations intermingle.

Political risks can include:

- higher or selective taxes, duty or withholdings;
- currency devaluation;
- political instability following changes in government;
- nationalisation;
- confiscation or expropriation, with or without compensation;
- the imposition of, or adverse changes in, exchange control regulations;
- import restrictions/quotas on fuel or equipment;
- restrictions on remittances;
- (in some countries terrorism or sabotage);
- land and compulsory purchase issues;
- disputes between state and local governments or between government departments; and
- corruption.

In addition to political risks arising in the country itself, a number of cross-border political risks can occur, for example:

- restrictions on export licences for equipment or technology;
- currency/foreign exchange restrictions; and
- blockades or embargoes.

There are a number of ways of mitigating against certain political risks. Political risk insurance cover may be available from multilateral agencies, for example, under the World Bank guarantee programme. Export credit agencies also provide political risk cover. Political risk cover may also be available from private insurers, although the cost is often high and the areas of coverage under these guarantees or insurance policies differ widely. In some cases investors may also rely on bilateral investment treaties (BITs) (see Discrimination risks below).

#### Illustration:

Project sponsors and lenders will analyse and seek to mitigate political risks. A number of questions may be relevant. Is the institutional structure sufficiently clear, such that the relevant authorities can be identified and a decision or authorisation obtained which will bind other state authorities? Is the project one which is fully authorised and preferably one which, perhaps as part of an agreed development programme, is in tune with policy and likely to be promoted? What level of support and assurance will the state give as to, for example, the continuation of permits or the availability of

hard currency? Can assurances given be enforced against the state entities providing them? In some developing countries, that do not have a track record of promoting and successfully delivering key infrastructure projects, potential developers (and their lender) may insist on the host government entering into an agreement with the project's shareholders and/or the project company to enhance the project's bankability (often referred to as "Implementation" or "Host Government" agreements). The scope of these agreements will vary from project to project. A list of some of the areas that may be included in such agreements is set out in Figure 5.

## Figure 5:

### Government obligations under HGAs:

- grant of requisite land rights (including compulsory purchase as required);
- facilitate import and export of equipment, raw materials, supplies and export, as required, of products from project;
- ensure governmental approvals granted in a timely manner, and are renewed;
- no governmental approval is revoked without cause;
- cause all reasonable efforts to expedite consideration of application for governmental approvals;
- ensure critical consents are granted prior to date scheduled for financial close;
- procure guarantee by Ministry prior to financial close in respect of payment and performance obligations of utility providers;
- ensure no expropriation occurs of project assets;
- no competing projects (or compensation regime)
- not intervene in construction, operation, maintenance of project in a manner that is adverse to the project company; and
- not to take discriminatory action that materially and adversely affects the project.



## Transportation risks

Where a project is dependant on external transport systems either for delivering raw materials to the project site or delivering the project's output to market, the shareholders will need to consider how to mitigate the risk of an interruption in operations caused by an event affecting the transportation arrangements. Raw materials may be delivered to the project site by rail, road, or sea (or any combination) and the same is the case for the project's output. Securing long-term transportation contracts with reliable operators will be key, as will be the ability of the project to have back-up transportation arrangements in place. Appropriate access rights to railways systems and ports must be negotiated in advance with the appropriate authorities. Who bears the transportation risks will depend on the individual circumstances of the project, but if a project can allocate these risks to its suppliers and buyers then this will leave the project to focus on its primary business. Some transportation risks, for example, strikes affecting essential transportation, can be insured against, but many must simply be allocated among the various parties.

### Illustration:

An aluminium smelter typically has to manage a number of potentially competing transportation risks. On the supply side, it will need as

essential raw materials pitch and coke and also alumina. Both will need to be delivered to the plant either by rail or by sea. On the sales side, the project company will be selling aluminium products and similarly, these will need to be transported by rail or sea. If the delivery or sale is by sea, the project company will need to determine whether to purchase or sell on CIF or FOB terms. Normally, the project company will not arrange shipping itself so it will purchase on CIF terms and sell on FOB terms. If both the raw materials and products are being shipped an added complication will be securing sufficient port access and berthing facilities and arranging the logistics for deliveries on exports. Typically, a project will want to hold sufficient back-up supplies to cover any delays in delivery of raw materials and have sufficient storage facilities to cover any delays in exporting products.

## Discrimination risks

In many concession agreements the nationalisation or expropriation of any of the project's property or assets, or the shares in the project company, or some other overt discrimination against a project or the project company, such as treating a potentially competing project more favourably or imposing discriminatory taxes or duties, will be a specific termination event entitling the project company to terminate the concession agreement and claim termination compensation

from the grantor. In such cases the level of termination compensation will usually be a sum equal to the aggregate of the total debt and equity invested in the project (see Early termination risks below for a more detailed description). However, this will not always be the case, and even where there is a contractual right to compensation, there may be disputes and protracted proceedings in the local courts which may or may not produce the right result for the project company and the shareholders.

### Illustration:

If termination compensation is not provided as a contractual right under the concession agreement, then another way perhaps of achieving the same result would be to see if the host country has a bilateral investment treaty with another country through which it is feasible, subject to tax and other considerations, for the shareholders to invest into the project from. If the terms of the relevant bilateral investment treaty do cover, for example, expropriation, either expressly or indirectly, then this may afford the shareholders a way to recover their expropriated assets. Another attraction of bilateral investment treaties is that they will typically provide for arbitration in a neutral venue between an investor and the host country, under ICSID<sup>2</sup> rules which are tailored towards investment disputes.

<sup>2</sup>ICSID is the International Centre for the Settlement of Investment Disputes set up specifically to hear investor-state disputes, established in 1965 and based in Washington DC. Over 150 countries have signed the ICSID Convention.



Further, any ICSID tribunal award is enforceable in a state that has ratified the ICSD Convention as if it were a judgment of a local court.

### Construction risks

For most projects the construction of the project is the time when a project faces its most significant risks; that is certainly the case for most infrastructure and utility projects. The most significant construction risks are cost-overruns, delays and technology/commissioning risks. But there are many other risks associated with delivering a project on time and on budget. That is not to say there are no risks for a project once it is commissioned and in operation. These can also be significant, particularly with projects that have multiple independent plants or trains where there are plants or trains in a process chain relying on others in that chain for raw materials or feedstock. The identity of the construction contractor will also be critical. As well as being an experienced and creditworthy contractor, in many projects the shareholders will want a turnkey solution with a single point of responsibility, and at the same time managing or reducing sub-contractor risks.

#### Illustration:

Many large scale industrial plants, such as aluminium smelters and

petrochemical plants involve multiple units/processes that typically are supplied/built by different pools of contractors. For example, in an aluminium smelter, the contractor building the coking plant will usually be different from the contractor building the potlines and/or the cast house; and in a petrochemical plant, the contractor building the ethane cracker will not usually be the same contractor building some of the process plants in the overall complex. What this means in practice for shareholders and the lenders is that the turnkey/single point of responsibility model is much more difficult to achieve as the project will necessarily need to employ multiple contractors on the same site. There are structures that seek to ameliorate this risk from the project company's perspective, such as appointing an engineering, procurement, construction manager (EPCM contractor) to manage some of the interface and other risks associated with employing multiple contractors. However, no EPCM contractor will accept unlimited liability for another group of contractors and at best this will provide recourse to the EPCM contractor subject to an overall cap on liability (say, 15 to 20 per cent of the overall construction costs under its management and supervision). The bottom line for the project company with these types of multiple contractor projects is that there is a much greater construction and commissioning risk. This will make it considerably more

difficult (and expensive) to raise limited resource finance for such projects and, perhaps, impossible without the shareholders providing completion and/or cost-overrun guarantees to mitigate these risks. This in itself requires strong and creditworthy shareholders willing to utilise their balance sheets during the construction phase of the project and, if the project faces commissioning and/or testing challenges, sometimes for much longer.

### Land risks

Nearly all infrastructure and on-shore energy projects will involve land and with land goes a number of risks. At its simplest, the land issues may involve the government providing the project company with a plot of land on which to build a plant or building. At the more complicated end of the spectrum is, say, a road project where the government has to compulsorily acquire hundreds/thousands of individual plots of land and deal with compensation claims and potential disputes. The type of legal rights granted to the project company can vary from an outright transfer of freehold title, a lease or usufruct right or sometimes just a licence to occupy, build and operate. In some jurisdictions there are legal or constitutional restrictions on foreigners owning land. In other jurisdictions legal regimes mandate that public services, such as roads, bridges, tunnels etc. must be

owned by the government which necessitates a different concession structure such as Build, Transfer and Operate (BTO).

#### Illustrations:

An airport expansion project including new approach roads connecting to a new highway throws up a number of potential problems. Firstly, the land has been used previously for some industrial projects. Who will take the site or ground risk that the land is not contaminated? Sometimes the government will make available a land survey to potential concessionaires and call for them to rely on this. In other cases the concessionaires will have to undertake their own surveys. The usual risk allocation is that, except in extraordinary cases, the site or ground risk will be allocated to the concessionaire who will seek to pass on this risk to the construction contractor. Secondly, the land may have undiscovered utility conduits such as sewers, pipelines and other utility connections. The concessionaire may be more successful in allocating these risks to the government or at least being indemnified by the government for costs associated with diverting these connections to the extent any competent survey did not disclose their existence. Thirdly, what if architectural or historical artifacts or buildings are discovered on the land during construction? Most concession agreements will impose

obligations on the concessionaire to ensure, for example, that its staff do not damage or remove these although the concessionaire will be permitted to claim for an extension of time and, sometimes, an indemnity for additional costs incurred as a result of those obligations imposed on the concessionaire.

#### Early termination risks

A project can terminate (or be terminated early) for many reasons. Usually the reasons can be categorised as either a grantor default, a project company default, a prolonged force majeure event<sup>3</sup> or a grantor risk event. In most concession based projects once the project assets have been returned to the grantor, the grantor will either have to find a new concessionaire or develop and/or operate the concession itself. Most concession agreements will prescribe that the grantor must pay the project company a sum of “termination compensation” to compensate the project company for transferring the project assets to the grantor. The amount or calculation of termination compensation, and specifically the elements that it will include, can materially affect the risk profile of a concession. If limited resource financing has been raised by the project company to finance the project, then the lenders will be concerned to ensure that the termination compensation always includes at a minimum outstanding loans and interest (and related sums). The shareholders for their part will

be concerned to ensure that their contributed equity at least will be covered and, where the reason for the default is a grantor default or grantor risk event, a sum on account of future foregone equity returns is paid to them. There are, of course, a great many different ways of calculating termination compensation and clearly one of the key factors is the time when termination occurs (i.e. during the construction period or the operating period).

#### Illustration:

In a bridge PPP project (on a build-operate-transfer basis) the concession agreement includes the following termination compensation provisions. This termination formula probably represents the ideal (or near ideal) outcome for the shareholders and their lenders. It should certainly not be assumed that all governments will agree to such a solution:

Termination due to government default or Grantor risk events: an amount equal to the sum of:

- the Concessionaire Senior Debt; plus
- the Shareholder Equity Contribution Amount; plus
- the Employee Termination Payments; plus
- the Contractor Losses; plus
- the Transfer Amount; plus

<sup>3</sup>“Grantor risk event” might include events (other than natural force majeure events) that have been allocated to the grantor or are the “fault” of the grantor, e.g. non-renewal of project permits, nationalisation, change in law, non-availability of utilities, non-renewal of project consents.

- the Equity Compensation Amount; minus
- the Insurance Sums; minus
- the Cash Balances

Termination due to Concessionaire default which: an amount equal to the sum of:

- the Concessionaire Senior Debt; plus
- the Shareholder Equity Contribution Amount; plus

- the Transfer Amount; minus
- the Insurance Sums; minus
- the Cash Balances.

Termination due to prolonged force majeure which: an amount equal to the sum of:

- the Concessionaire Senior Debt; plus
- the Shareholder Equity Contribution Amount; plus

- the Employee Termination Payments; plus
- the Transfer Amount; plus
- the Contractor Losses; minus
- the Insurance Sums;
- minus the Cash Balances.





## Termination compensation

“Cash Balances” means any positive cash balances that are credited to the accounts set up by the concessionaire for the purposes of the project at the termination date, excluding any accounts which are pledged to lenders under the financing agreements and any distribution account so called under the financing agreements.

“Concessionaire Senior Debt” means all amounts outstanding at the termination date, from the concessionaire to the lenders under the financing agreements, including all principal, interest, fees, costs, expenses, early termination or close-out sums and brokerage costs, to the extent, where applicable, that such amounts have been expended directly or indirectly for the purposes of fulfilling the concessionaire’s obligations under the concession agreement [or the shareholders obligations under any equity bridge facilities, in each case] in respect of the project.

“Contractor Losses” means:

- (a) the amount reasonably and properly payable by the concessionaire to the construction contractor under the terms of the construction contracts as a direct result of the termination of the concession agreement;
- (b) the amount reasonably and properly payable by the concessionaire to the o&m contractors under the o&m contract as a direct result of the termination of the concession agreement; and
- (c) the amount reasonably and properly payable by the concessionaire to any other of its contractors, suppliers and consultants in respect of goods and work and services performed for or in connection with the Project as a direct result of the termination of the concession agreement.

“Discount Rate” means [•]% per annum.

“Employment Termination Payments” means the aggregate amount of payments for the termination of employment which are required under law to be made to employees of the concessionaire not transferring to the grantor reasonably and properly payable by the concessionaire as a direct result of termination of the concession agreement, provided that such amounts shall not exceed the minimum amount provided at law or under any applicable contract of employment.

“Equity Compensation Amount” means an amount equal to the aggregate of:

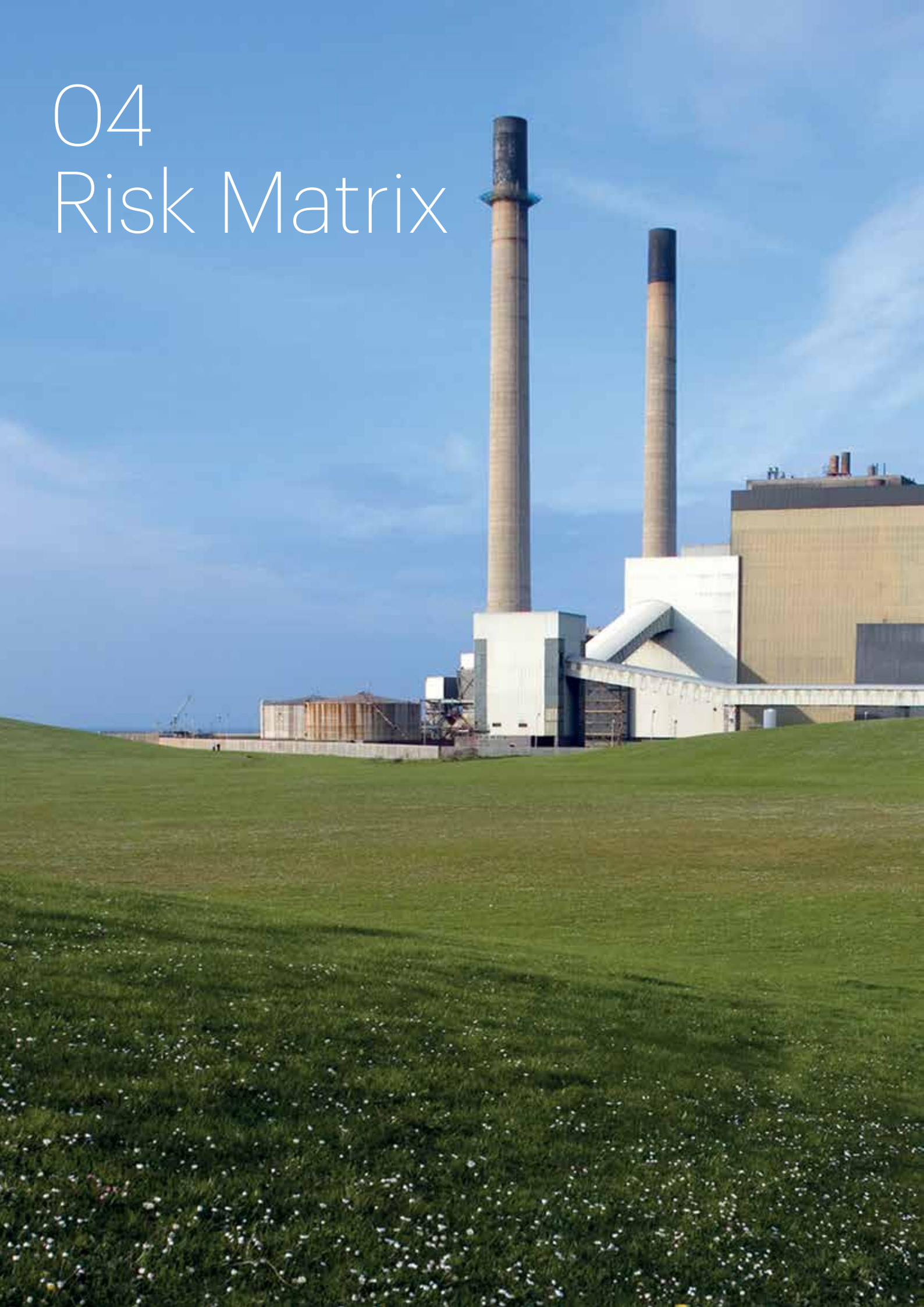
- (a) the amount that when taken together with all amounts already paid by the concessionaire in respect of equity up to (and including) the termination date (by way of dividends or other distributions on the share capital of the concessionaire or as payments of interest and principal under shareholder subordinated loans) and taking into account the actual timing of all such payments, provides the shareholders with an internal rate of return equal to the [Equity IRR] as set out in the agreed financial model (as at the date of financial close); and
- (b) all amounts that are payable by the concessionaire from (and excluding) the termination date over the remaining term of the concession agreement (by way of dividends or other distributions on the share capital of the concessionaire or as payments of interest and principal under shareholder subordinated loans), each amount discounted back using the Discount Rate from the date on which it is payable in such agreed financial model to the termination date.

“Insurance Sums” means any insurance or bond proceeds irrevocably received by the concessionaire at the termination date and not already spent by the concessionaire on remedying, repairing, rectifying or replacing the property, assets or services for which they were received.

“Shareholder Equity Contribution Amount” means the amount equal to the aggregate of all amounts paid by the shareholders to the concessionaire by way of a subscription of shares in the capital of the concessionaire or subordinated loans (including interest and fees thereon) to the concessionaire plus the adjustment in the equity contribution value due to the variation in the applicable foreign exchange rate of [the local currency] to a US Dollar, as published by the Central Bank of [•], between the applicable rate on the date of financial close and the rate on the termination date.

“Transfer Amount” means a sum equal to all costs and expenses (including taxes) arising out of the transfer from the concessionaire to the grantor (or its nominee) of all its rights and title in and to the Project.

# 04 Risk Matrix



A useful tool for evaluating risks in a project is to prepare a detailed risk matrix identifying the key risks. An example (of the Design, Construction and Commissioning issues section) of such a risk matrix is set out in the schedule to this article. The following points should be borne in mind with such a risk matrix:

1. A risk matrix is illustrative of the issues which could arise in an energy/infrastructure project, including projects involving lenders on a project financed basis. It lists those risks likely to arise and suggests ways in which the risks arising can be mitigated.
2. The list of risks is not exhaustive. Each project must be carefully analysed to identify additional and project specific risks.
3. A risk matrix will usually be developed primarily from the perspective of the project company. It will not necessarily deal fully with risks which may be relevant to other project participants, such as lenders or government entities.
4. In addition, the risk matrix will focus on the types of risks which may arise in the course of delivering the project, in particular once the project agreements have been signed. Once these risks are analysed in the context of the

particular project, this may lead to appropriate provisions being included in the project agreements to mitigate or allocate those risks, or may even result in a decision not to proceed with the project.

5. The list of mitigants in respect of each risk will not be exhaustive. Consideration should be given in all cases, for example, to whether conditions precedent in the project agreements, insurance, the pass-through of costs or the involvement of multilateral agencies is an appropriate risk management strategy. There may be other mitigants available in the particular circumstances.
6. Risk allocation is often not simply a function of whether a specified risk has occurred, but also why it has occurred. In general, if a party has itself brought about the occurrence of the risk, for example by failing to perform an obligation, that party should expect to have to bear the consequences of that failure. In other cases, the risk may arise because of an external event which the affected parties could not prevent. In those cases, risk allocation cannot be based on blame criteria.
7. Risks may be classified on the basis of a number of different parameters, including timeframe,

project participation or project function (such as financing, input, offtake or operation). No single classification will be suitable for all projects. Here is a suggested classification for these purposes:

- inter-governmental;
- project-specific new domestic legislation;
- procurement;
- regulation/change of law/political risk;
- environmental;
- land acquisition;
- planning;
- design, construction and commissioning;
- operation and maintenance;
- connection to utilities;
- fuel/feedstock supply;
- product offtake;
- financial;
- employment; and
- general.

A given risk may be relevant to more than one of these headings.

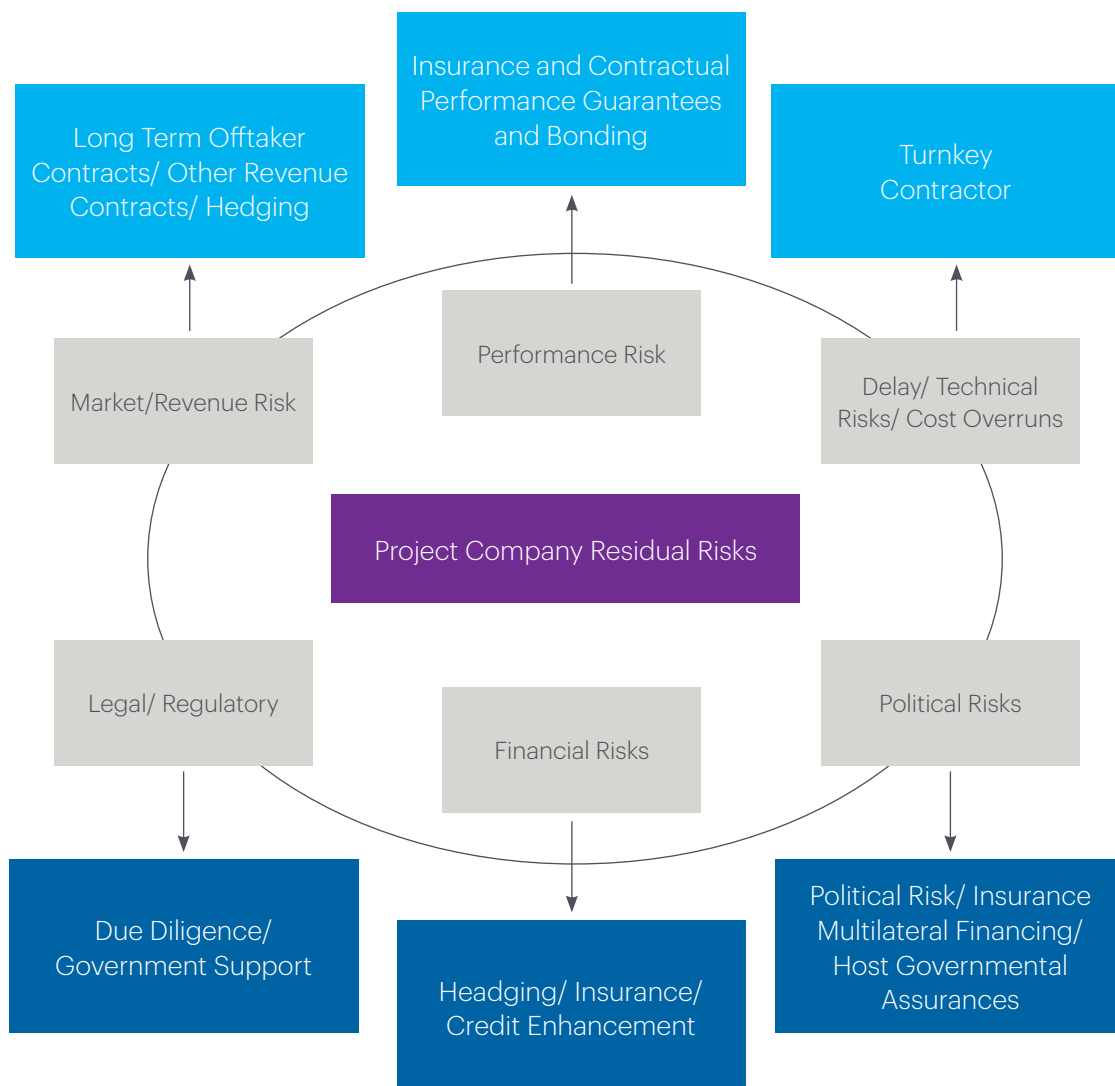
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# Conclusion



Set out below is a diagram highlighting the most common potential risks with any project, along with the possible mitigation measure, that have been discussed throughout this article.

### Risk Mitigation for Sponsors - A Summary



While not all of these risks will be relevant to every project, many of them will be, and the shareholders, the governments and other key stakeholders will need to structure the various elements of the project with the bankability requirements addressed in this article in mind.

In many (but not all) cases, the interests of the shareholders (and sometimes the governments) and the lenders, will be aligned in relation to these risks. For companies not experienced with these type of transactions, the following points may be helpful:

1. Undertake at an early stage a thorough due diligence of the proposed project, the project's economics and the key project counterparties with whom you will be dealing.
2. Appoint experienced legal and financial advisers early in the process and ask them to undertake a detailed risk analysis of the proposed project and do not commit to participating in a project without a clear appreciation of the risks inherent in it.
3. Agree with your advisers what are the minimum legal, technical and financial foundations of the proposed project and address at an early stage risks identified in the risk analyses that must be borne by or shared with others.
4. Agree written "head of terms" with key project counterparties (e.g. suppliers, contractors, operators and offtakers) covering key legal, commercial and financial terms before committing to involve these counterparties in the proposed project.
5. If a joint venture is proposed with one or more companies, negotiate a joint venture agreement or joint development agreement, again, before committing to involve these counterparties in the proposed project. If you are bidding for a project then a joint development or bidding agreement should suffice.
6. Establish at an early stage with your advisers whether the proposed project and project structure is "bankable" and, if not, what structural changes must be made to make it "bankable".
7. If other similar projects in the same country have been successfully closed, try and find out key terms and risk allocation from these projects and ascertain whether these will form a base or precedent for the proposed project.
8. With so many counterparties involved, in different workstreams (technical, construction, legal, financial, etc.), invest sufficient time at the outset to organise your team (internal and external advisers) such that different workstreams can progress in parallel. A common mistake is not to involve the proposed lenders until all the project contracts have been settled. If the lenders raise concerns, it may be too late (or commercially disadvantageous) for you to have to go back and re-open "settled" project contracts.
9. Try to keep the overall structure as simple as possible. Seemingly minor adjustments can have a significant knock-on effect, usually quite unintended, on other parts of the project or other project counterparties.
10. Try to ensure that all risks have been allocated to the relevant parties, that those parties are capable of fulfilling such obligations, and that any residual risk left with the project company is reduced to a level that is manageable by, and acceptable to, both the shareholders and the lenders.
11. If bidding for a project, ensure that you agree your financing terms with your lenders prior to submitting your bid as, once

declared “preferred bidder”, you will be under severe time constraints to achieve financial close and your lenders may not turn out to be as flexible with key financial or documentation terms as you may have expected.

12. Address potential commercial or legal conflicts of interest among the shareholders at an early

stage as these tend to become more difficult to resolve the later they are addressed. The most common conflicts are where the construction and/or operation and maintenance contractors are a part of the shareholder group.

13. A limited recourse project financing is like a jigsaw puzzle with many pieces all of which

have to fit together in the correct order for a project to succeed. Every party will have specific requirements, not all of which will fit the puzzle. Flexibility and an open and creative approach will go a long way toward a successful closure of the proposed project.



## Schedule 1

### Design, construction and commissioning - risk matrix content

Event	Effect/Remarks	Mitigation	Risk allocation/treatmnt in contract(s)
1. Cost overrun.	Increased cost.	Consider a fixed price turnkey engineering, procurement and construction (Construction) contract.	
2. Cost escalation – Construction contractor-specific labour demands (including strikes, etc.).	Increased cost.	Seek to transfer these risks to the Construction contractor.  Exclude from definition of force majeure for Construction contractor.	
3. Cost escalation – non-Construction contractor-specific labour demands (including strikes, etc.).	Increased cost.	Ensure Construction contract is fixed price.  Include in definition of force majeure in the Concession Agreement, leading to an extension of term and payment of compensation.	
4. Delay – contractor failure Delay – contractor failure.	Could this result in failure to fulfil project pre-conditions by long-stop date? Or failure to commence supply by required start date?  If so, may lead to loss of income stream and impact on ability to repay financing costs.	Consider liquidated damages (LDs) from Construction. Ensure that LDs set in Construction contract are equal to or exceed “penalties” in the Concession Agreement and that force majeure relief given to the Construction contractor under the Construction contract is no wider than the force majeure relief available to the Project Company under the Concession Agreement.  Project/completion bond?  Right to terminate Construction contract and replace the Construction contractor.	
5. Delay – design changes.	Could this result in failure to fulfil project pre-conditions by long stop date? Or failure to commence supply by required start date?  If so, may lead to loss of income stream and impact on ability to repay financing costs.	Minimise risk through output/performance specifications in Construction contract.  Restrict ability of contractor to make design changes.  Restrict ability of concession granting authority to make design changes and provide that, if it does, then the concession granting authority must cover costs of such changes and grant any required extension of time.	



Event	Effect/Remarks	Mitigation	Risk allocation/ treatmnt in contract(s)
6. Delay – force majeure.	Force majeure regime.	Force majeure relief.  Provide Project Company right to terminate for long-term delays.  Seek insurance cover for natural event force majeure.	
7. Completion delay/increased costs – failure of suppliers.		Offset risk with appropriate back-to-back arrangements with Construction contractor/suppliers.  Pass down risk to Construction contractor.	
8. Completion delay/ increased costs – regulatory requirements.	Change in law regime	Change in law relief. Provide Project Company with time and costs relief.	
9. Disruption due to protestors.	Delay and/or increased costs (e.g. for additional security).  Consider inclusion in force majeure regime.	Contingency in budget/Project programme.	
10. Unexpected archaeological finds.	Delay for proper survey and scheme for protection to be drawn up. Risk of planning inquiry. Possibility of delay which could require deferral of the Project commencement date and/or increased cost.  Archaeologists may demand access to site.	Early archaeological review (desk studies, surveys) and plans for removal or retention.  Seek to transfer risk to Construction contractor.  Contingency in budget/Project programme.  Alternative site.	
11. Land not fit for purpose.	Ground conditions prove unsatisfactory for plant. Delay (which could require deferral of the Project commencement date) or total frustration.  Does acquisition/lease contract require site to be suitable?	Early investigation of site.  Liability of surveyor (likely to be limited).  Warranty from transferor/lessor?	

Event	Effect/Remarks	Mitigation	Risk allocation/ treatmnt in contract(s)
12. Import restrictions on equipment/materials.	Delay and/or increased cost.	Source equipment/materials locally.  Negotiate exemption from restrictions.	
13. Non-availability of certain equipment/materials.	Delay or complete inability to proceed with original specifications.	Provide sufficient flexibility in design and specifications to allow alternative sourcing or alternative equipment/materials.	
14. Failure of plant to achieve specification/ taking-over requirements.	Could this result in failure to fulfil project pre-conditions by long-stop date? Or failure to commence supply by required start date?  If so, may lead to loss of income stream and impact on ability to repay financing costs.	LDs (for failure to achieve performance and reliability tests) and obligation to remedy.  Require performance guarantee from Construction contractor.  Consider payments against milestones in Construction contract.  Ensure Project agreements are back-to-back.	
15. Insolvency of contractor.	Delay and/or increased costs.	Obtain guarantee from creditworthy entity (bank, parent company, etc.).  Also seek some other credit enhancement – for example, make payment obligations to the contractor in arrears (e.g. 60 days) so as to have the ability to retain some funds.	
16. Accidental loss or damage.		Insurance for the replacement value of the plant against all possible risks.	



# Author bio



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Neil is a banking and finance partner focusing on project and infrastructure financings. He has been based in Dubai since 2001. He has extensive experience of advising banks, governments, borrowers, sponsors and others in project financing transactions covering a wide range industries, including the oil and gas, electricity, water, mining, leisure, transportation and telecommunications industries. He also has a general banking practice that includes advising banks, borrowers and others on a wide range of banking products, including lending, structured finance, derivatives, trade finance, development finance and restructurings. He has lectured extensively on a wide range of banking subjects including at the Euromoney Winter and Summer Schools of Project Finance. He is

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Neil was head of the Dubai office from 2001 to 2010. He was Managing Partner of the Firm's Middle East offices from 2005 to 2011 and is currently Senior Partner of the Firm's Middle East offices. He is also a member of the Policy and Planning Board of Dentons UKMEA LLP and sits on the General Advisory Committee of Dentons. He is also a member of the Global Board of Dentons.

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- *Chambers Global Guide to the World's Leading Project Lawyers.*
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