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Risk Allocation in Power Projects

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Risk Allocation: Introduction

Today I propose to cover:

- a general introduction and basic principles of IPP project risk allocation
- a review of a typical project structure for IPPs supplying state-owned power utilities
- a review of some of the significant project risks, including considering:
  - examples of some key risks
  - how can they be allocated
  - how can the Project Sponsors protect themselves and the Project Company against such risks or pass the risks to others in the project documentation?
- some comments on preparing and reviewing risk analysis reports

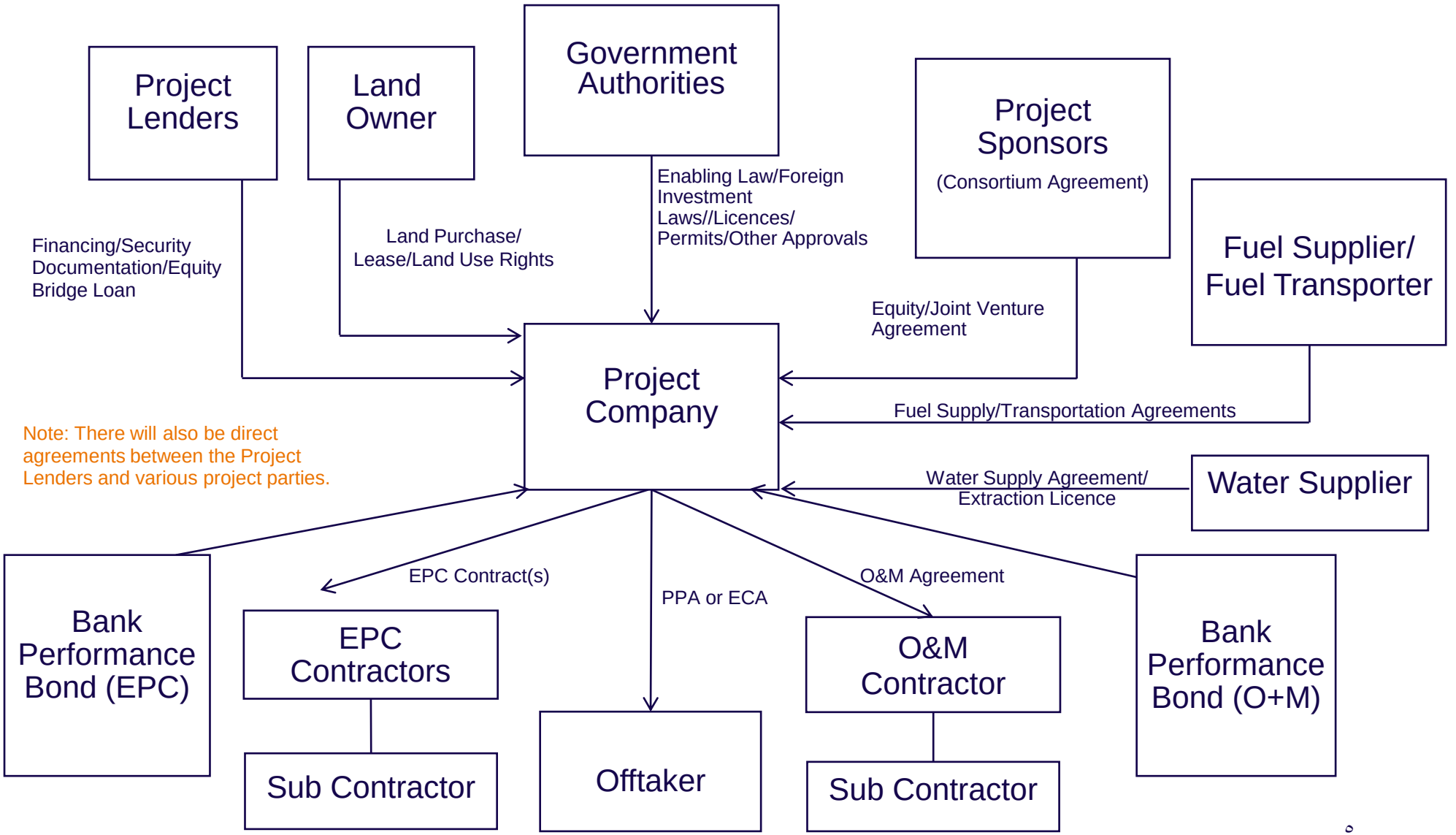
Risk Analysis – a matter of universal interest!

- Risk analysis is a technique that underpins the Project Sponsor's commercial and legal understanding of the arrangements for a power project
- The documents involved in such projects are long, detailed and complicated
- Whilst the Project Sponsors must understand the individual documents, they must also understand how these documents interrelate, in order to understand the commercial and legal risks

Risk Analysis – a matter of universal interest! (2)

- Risk analysis will also be undertaken by:
  - Lenders, to evaluate the risk profile and whether a project is capable of being financed (i.e. whether it is "bankable")
  - companies involved in acquisitions in the power sector (when purchasing an interest in an existing power project, it is necessary to understand where the risks lie and how they have been allocated)

Simplified Typical IPP Project Structure



Power Projects: Advisors (1)

- Technical/Commercial Advisors (if required): advise on commercial/technical/engineering issues, including:
  - commenting on the project engineering/design
  - advising on environmental issues, including environmental compliance/due diligence (usually separate environmental consultants are engaged)
  - evaluating operation and maintenance issues/equipment lifecycle
  - advising on payment calculations/formulae in the Power Purchase Agreement and other documents

Power Projects: Advisors (2)

- Financial Advisor: advises on financing/financial structuring issues including:
  - advising on the financial model/financial structuring/project debt pricing
  - advising on the ability to project finance the project – including what is acceptable in the lending market in terms of risks lenders will accept
  - advising on possible equity bridge loan to fund sponsor equity contributions
  - assisting with the documentation process/timetable with project lenders
  - advising on the underwriting/syndication of project loans

Power Projects: Advisors (3)

- Tax/Accounting Advisors: advise on local and other applicable tax and accounting regimes including:
  - providing an understanding of the tax system/accounting requirements (including income taxes/capital gains taxes/employee-related taxes/turnover taxes/customs duties/stamp duties/sales taxes/VAT)
  - advising on the capitalisation and deductibility of pre-incorporation expenses
  - advising on the deductibility of interest/capital expenses
  - advising on any withholding and other taxes on fees payable to contractors/Project Sponsors

Power Projects: Advisors (4)

  - advising on withholding and other taxes on dividends/restrictions on the payment of dividends/any local profit retention requirements
  - advising on withholding and other taxes on payments to lenders

- Insurance Advisor: usually an insurance broker advising on insurance issues, including:
  - advising on the cost and structure of the project's insurance package and its terms/what is commercially available in the insurance market
  - reinsurance arrangements where local law requires insurance to be taken domestically

Power Projects: Advisors (5)

- International counsel: advise on legal issues, including:
  - preparation, negotiation and advising on documentation
  - assisting with the bid process/bidding documentation (including legal due diligence and risk analysis)
  - providing commercial knowledge/experience from other transactions
  - coordinating legal project management

Power Projects: Advisors (6)

- Local counsel: advise on local legal issues, including:
  - advising on local law and practice (including rules on foreign investment)
  - providing experience of local courts/enforcement of foreign judgments and arbitral awards
  - providing clarification of local legal system

Basic Principles (1)

- Basic principles – risk should be allocated to the person best able to manage it, usually through their technical expertise and insurance
- The Project Company should only accept risks that it is able to manage itself or pass down to contractors/insurers/others
- Risk allocation to the Project Company or other private entities usually involves additional cost
- The risk allocation should be “bankable”. What is acceptable to the Project Lenders is often driven by precedent as well as market conditions
- Risk allocation should also take account of whether the Project Company only has one source of revenue (i.e. the Offtaker)

Basic Principles (2)

- Where the Project Company is passing risks through to others, this should be done in the project documentation by ensuring that the contractual documentation is "**back to back**" (i.e. as far as possible the risks in one project document (e.g. the Power Purchase Agreement) to be assumed by another party (e.g. the EPC contractor) are successfully "passed on" to that other party in the documentation)

- Why is this necessary?

  – to limit the risks taken on by the Project Company/pass on the Project Company's risk

Basic Principles (3)

- to ensure the “bankability” of the project (the ability to obtain project finance)

- Project Lenders and Project Sponsors will want to ensure that the Project Company limits as far as possible the amount of risk assumed by the Project Company and that it passes certain risks to others, for example through EPC contracts and Operation and Maintenance agreements

Examples of Some Key Power Project Risks (1)

- Regulatory and enforcement risk
- Changes to financing and development costs/recovery of development costs
- Creditworthiness of the Offtaker and cashflow risks
- Site, environmental and decommissioning risks
- Design, construction (including defective design and delays to completion) and degradation risks
- Tariff-related risks (including changes to costs of financing, currency exchange rates and inflation)

Examples of Some Key Power Project Risks (2)

- Fuel availability and fuel supply risks (including take or pay/dispatch/heat rate risks)
- Operation and maintenance risks
- Availability risk
- Liability risks
- Changes in law/tax regime
- Market reform and changes to the local power market
- Force majeure
- Termination risk and buy-out

Regulatory/Enforcement Risks (1)

Regulatory Regime Risks

- It is important to assess:
  - the clarity of the legal framework for the project in the relevant jurisdiction
  - whether the proposed project structure and documentation are consistent with applicable local laws, as these can override contractual terms

Regulatory/Enforcement Risks (2)

- An investigation should be made of the approvals, permits and licences required for the project. Issues to consider include:
  - whether they are acceptable or unduly onerous
  - how long they apply, what are the requirements for renewal and what would be the terms on which they would be renewed
  - what happens if they are not granted/made available

Regulatory/Enforcement Risks (3)

- Failure by the Government Authority or a governmental entity to renew necessary approvals, permits and licences in a timely manner following proper application should be treated as an offtaker risk event, except where due to Project Company default

Enforcement Risks

- The ability to enforce arbitral awards or judgments in the relevant jurisdiction should be considered, as should issues of sovereign immunity from proceedings and enforcement when dealing with Government Authorities/governmental entities

- Arbitration in a neutral state is usually recommended for the dispute provisions but this needs careful review

Changes to Financing and Development Costs/Recovery of Development Costs

- What happens to development costs if the project does not proceed? The consortium agreement should address this and how to split such costs between the consortium members if the project does not proceed. Can the costs be recovered from the Government Authority or proposed Offtaker (EG: Kuwait)

- A careful analysis is needed of how costs incurred prior to incorporation of the Project Company can be capitalised/recovered. Make sure there is appropriate documentation in relation to such costs and take accounting / tax advice at an early stage

Changes to Financing and Development Costs/Recovery of Development Costs (2)

- Fixed price (lump sum) EPC contracts should be sought but thought needs to be given to possible cost over-runs where the EPC contractor is entitled to additional funding. How will this be sourced?
- Hedging against certain risks such as currency fluctuation may be a feature of the financing package

Creditworthiness of the Offtaker and Cashflow Risks (1)

Credit Risk

- It is important to analyse who the Offtaker and its financial position. How does it derive its revenues and in which currency do its revenues arise?
- Will there be a currency exposure for the Offtaker? Is it in a position to manage that exposure?
- Is any credit support available from any governmental entity (e.g. a guarantee)?

Creditworthiness of the Offtaker and Cashflow Risks (2)

Cashflow Risk

- Assuming that the Power Purchase Agreement is the Project Company's sole source of revenue, the Project Company will want the Offtaker to pay amounts invoiced irrespective of any disputes: the principle of "pay now, argue later". Disputed payments should not be withheld by the Offtaker or a mechanism needs to be introduced to avoid substantial risk to the Project Company to ensure that its lenders do not declare an event of default for non-payment.

- It is important to ensure that the credit terms are appropriate for the expenditure profile of the Project Company to ensure that as far as practicable the working capital requirements of the Project Company are minimised

Site and Environmental Risks (1)

Acquisition of Site/Other Land-Use Rights

- Site acquisition - varies case by case whether the Project Company purchases the land upon which the power facilities will be constructed or enters into a long term lease or is granted registered land use rights (usufruct)
- Consider also if other rights of way are required, for example for access, utilities and transmission/ interconnection facilities
- The lenders will have to be satisfied with rights to use the Site and associated rights of way as a condition precedent to financial close
- Where land is leased, the terms of the land lease agreement must be carefully reviewed, including termination and any rent review provisions. In addition, local law needs to be checked in relation to land acquisition/leases

Site and Environmental Risks (2)

Site Risk

- Adequacy of the site from a technical point of view/suitability for construction requirements. Generally, this is a Project Company risk - this may be passed on (partially) to the Land Owner/EPC or O&M contractor (but it is currently a contractor market)

- Some site risk may be passed on to the Government Authority/Offtaker, for example, delays or costs arising from archaeological discoveries

- A review is required of the obligations to remediate/decommission facilities at the end of the concession period/term of the Power Purchase Agreement. Risk usually falls on the Project Company above any “baseline” level

Site and Environmental Risks (3)

- In addition, a review is required of obligations to hand-over facilities in a specified condition on termination/expiry of the concession period/the Power Purchase Agreement. This risk is also usually a Project Company risk, save to the extent that a failure to do this is due to matters for which the Government Authority/Offtaker is assuming responsibility

Site and Environmental Risks (4)

Environmental Requirements

- It is important to determine the applicable environmental requirements for construction and operation (local and international requirements, including Project Lender requirements such as the Equator Principles)

- The terms of reference for any environmental impact assessment should be carefully established, usually with the assistance of external environmental consultants

- This will help establish the environmental regime and liability for both historic pollution and potential future pollution

Site and Environmental Risks (5)

- In order to allocate responsibility for environmental liabilities, a baseline environmental assessment should be carried out at the site prior to the start of the project

- Who is responsible for pre-existing pollution at the project site? If the project site is provided by the Government Authority/Offtaker, this should be a Government Authority/Offtaker risk

Design and Construction Risks (1)

EPC Process

- The EPC “turnkey” contract should be a comprehensive “lump sum” and “date certain” agreement. The obligations of the Project Company should be minimised in order to reduce risk, with key risks being transferred to the EPC contractor

- Any extensions of time under the EPC contract should not be greater than the equivalent extensions available to the Project Company under the Power Purchase Agreement

Design and Construction Risks (2)

- Failure to complete on time due to EPC contractor breach should lead to liquidated damages becoming payable (although these will usually be limited/capped)
- Where delay of construction/commissioning of the power facilities is due to a default by the Offtaker, force majeure affecting the Offtaker or a offtaker risk events, then deemed availability payments should be payable by the Offtaker
- The Project Company should consider obtaining delay in start-up insurance as partial protection against delay in completion where deemed availability payments are not required (often to cover interest and debt repayments)

Design and Construction Risks (3)

Performance Standards

- The importance of having proven technology – the power facility must achieve certain performance standards (not least to satisfy the requirements of the Project Lenders who tend to be wary of unproven technology)
- Liquidated damages should be payable for inadequate performance by the EPC contractor
- The performance standards in the EPC contract should to the extent practicable be more onerous than their equivalent in the Power Purchase Agreement in order to seek to protect the Project Company and provide a “cushion” to the Project Company

Design and Construction Risks (4)

Interconnection Risk

- Failure to complete the project due to Offtaker or third party failure to complete interconnection facilities should be an Offtaker risk. It should result in time extensions and deemed availability payments. However, it needs to be considered as to whether these remedies will adequately cover the Project Company's costs

Tariff-related Risks (1)

Components of the Tariff

- It is important to obtain advice from financial/technical advisers to understand each component of the tariff. It is likely to comprise of at least two basic components:
  - a fixed capacity payment (to compensate the Project Company for its fixed costs, including debt service, fixed O&M costs, insurance costs) and to provide for a return on equity invested
  - a variable payment (to compensate the Project Company for variable costs of operating the power facility when it is asked to generate and despatch electricity to the grid)

Tariff-related Risks (2)

Exchange rate risk/inflation risk

- Typically each tariff component has an element indexed against changes in the exchange rate between the local currency and a specified foreign currency (e.g. Euros) as well as an element indexed against a local/foreign published measure of inflation

- The relevant formulae require financial and commercial analysis to test whether the relevant indices can be expected to provide sufficient protection against exchange rate risk and inflation risk over the life of the Power Purchase Agreement

Tariff-related Risks (3)

Interest rate risk

- Typically tariffs do not provide protection against changes in interest rates. This risk can be managed by entering into a long term interest rate hedge at financial close
- However, there should be a tariff adjustment for the cost of the hedging arrangement at the time it is entered into

Tariff-related Risks (4)

Availability deductions

- The Power Purchase Agreement will include provisions dealing with reductions of or deductions from capacity payments where the power facility is unavailable. However, deductions will not be made if the power facility is deemed to be available
- The provisions defining availability and deemed availability are extremely important. The level of reductions/deductions often vary depending on the time of day/time of year/extent of advance notice of an outage.
- This is in order to incentivise the Project Company to make the power plant available during times of peak demand and to give the maximum possible advance notice of any outage

Tariff-related Risks (5)

Fuel costs

- How fuel cost risks are dealt with will depend on whether the IPP uses a Power Purchase Agreement (where the project company purchases fuel itself) or an Energy Conversion Agreement (where the offtaker provides the fuel and pays a fee for its conversion into electricity)

- For a PPA:

  – Financial and commercial due diligence on the variable charge relating to fuel costs is required

  – It is important to ensure that the definition of fuel costs used in the formula includes all relevant costs including any important duties and taxes on supply

Tariff-related Risks (6)

  - The formula should allow the Project Company to recover fuel costs so long as the actual heat rate is equal to or lower than the contractual heat rate. The heat rate is a number that tells how efficient a fuel–burning power plant is. The heat rate measures how many kilowatt–hours of power output are produced by the Btu content of the fuel input.

- For an ECA, there is a slightly different approach. As fuel is not purchased, the project company will have to pay a penalty if the heat rate is higher than the contractual heat rate.

- Where the actual heat rate is lower then the contractual heat rate, the Offtaker may allow the Project Company to keep an agreed percentage of the upside. This provides an additional incentive to ensure that fuel efficiency is achieved.

Fuel Availability and Fuel Supply Risks (1)

Fuel Supply

- It is obviously important to ensure that the Project Company has a secure and reliable source of firm fuel supply for a term that matches the PPA/ECA
- In the case of an ECA, the Project Company should be deemed available and receive capacity payments if fuel is not supplied.
- If a PPA is used, it should be checked to see the consequences from the Project Company's perspective if the availability of the power facility is affected by a lack of fuel supply

Fuel Availability and Fuel Supply Risks (2)

- Shortfall damages from the fuel supplier are unlikely to match the potential reductions in tariff payments from the Offtaker. Therefore, consider whether the power facility should be deemed available in order to receive capacity payments (particularly where the fuel supplier is owned by the Government Authority) or whether these circumstances can otherwise be managed by the Project Company

Fuel Availability and Fuel Supply Risks (3)

- If the power facility can be operated on back-up fuel, then the parties would need to agree specific arrangements with respect to procurement, storage, use, pricing and allocation of costs for back-up fuel.

Take or Pay/Dispatch

- In the case of a PPA, does the fuel supply agreement contain a take or pay provision?

- If it does, then the Power Purchase Agreement should be checked to see whether there is a guaranteed dispatch level and indemnity which provides comfort that the Project Company would be able to meet its take or pay obligations under the fuel supply agreement, even if the plant was not actually being dispatched

Operation and Maintenance Risks (1)

- It is essential to have a committed, experienced O&M contractor
- Deductions/bonus schemes are often used to incentivise the O&M contractor
- Having an equity investment by the O&M contractor may help incentivise the O&M contractor
- Additional protection may be obtained by entering into a long-term parts and services agreement with an equipment supplier, including lifecycle replacement and availability guarantees
- The Project Company should also consider its insurance package and will often seek to protect itself against O&M risks by obtaining certain insurances, including business interruption insurance

Availability Risk (1)

- The general principle is that the Offtaker only pays for the lower of available capacity and contracted capacity

- Even where the power facility is not actually available, it should be deemed to be available for the purposes of capacity payments in certain circumstances

Availability Risk (2)

- Examples of provisions for deemed availability include where:
  - commercial operation is delayed past a specified date due to Offtaker default
  - the cause of non-availability is due to the Offtaker or force majeure affecting the Offtaker
    the cause of non-availability is due to or events where it is agreed the Offtaker should take the risk
  - the cause of non-availability is due to a Government Authority-controlled company or a company that has a monopoly on supply e.g. where the fuel supplier is a Government Authority-controlled company

Liability Risks (1)

- It is important to ascertain the potential liabilities of all parties

- Where a liability could lead to a payment to the Project Company (e.g. if the Project Company has an indemnity for the liability from another entity), it is important to ensure that the party with the liability can pay and that, as far as possible, the obligation of the other entity is at least as onerous as that of the Project Company. Consider payment support such as performance bonds for EPC contracts

Liability Risks (2)

- The Project Lenders will also be concerned about this: they will not want the Project Company to face liability in excess of what it can reasonably be expected to pay

- It is important to ensure that the Project Company's liability is subject to appropriate exclusions and that its liability for loss of profit is excluded, e.g. avoid liability for damage to the grid and ensure all liquidated damages payable by the Project Company are capped

- Tariff adjustment should be the exclusive remedy for a failure to supply power

Change in Law/Tax Regime (1)

Change in Law Risk

- The Project Company should receive relief/compensation for increased costs arising from a change in law either through direct compensation or an offtaker loan (e.g. where a change in environmental law requires capital expenditure to reduce emission levels) or by adjusting the tariff (e.g. where a change in taxation adversely impacts on the Project Company's profits or where the Project Company has been able to raise additional debt finance to pay for any increased capital expenditure).

- A change in law should give relief for inability to operate and result in payments of deemed availability payments (e.g. where new laws require additional anti-pollution equipment to be purchased and installed, such as the installation of desulphurisation units)

Change in Law/Tax Regime (2)

- If the change in law occurs before commercial operation occurs, where applicable there should be an extension of time so that the Commercial Operation Date is deferred
  with capacity payments commencing on the date they would have commenced if the delay had not been necessitated

Change in Law/Tax Regime (3)

- Change in law provisions should be checked to see if they address the possibility of market reform, e.g. through providing for a buy-out or an adjustment to the terms of the Power Purchase Agreement

Change in Tax Risk

- It is important to understand the tax system, including the operation of any applicable exemptions

- Do not assume that change in law provisions protect the Project Sponsors as well as the Project Company (for example, changes in income tax/withholding tax) – the drafting should be checked carefully

- Changes in transactional taxes (such as value added tax) should be an Offtaker risk

Force Majeure (1)

- A force majeure event is an event beyond the reasonable control of a party

- The Power Purchase Agreement could include:

  – a general definition of force majeure events (an “open list”)
  – an exclusive or specific list of force majeure events (a “closed list”)

Force Majeure (2)

- It is important to check for any specific exclusions – sometimes foreseeable events are excluded but exclusion of these may not be appropriate (e.g. foreseeable severe weather conditions which may occur only rarely but which cannot reasonably be dealt with through design)

- Force majeure events are usually distinguished into two classifications:

  – Offtaker risk events
  – Natural force majeure

Force Majeure (3)

- All force majeure events should allow extensions of time for performance by the Project Company but the Project Company should receive deemed availability payments where the power facility is prevented from operating by an offtaker risk event

- “Natural” force majeure affecting the Offtaker should result in deemed capacity payments

Force Majeure (4)

- Will the force majeure event lead to an extension of the term of the Power Purchase Agreement? It should, unless deemed capacity payments are made during the force majeure event

- There should be termination and buy-out rights for prolonged force majeure events (twelve months is not unusual)

- An important part of the Project Company's strategy for mitigating force majeure risk may be insurance e.g. delay in start-up insurance or business interruption insurance to the extent that the relevant events are commercially insurable

Termination Risk and Buy-out (1)

- Termination for Project Company default – issues to consider include:
  - are the termination events reasonable and within the Project Company's control?
  - what is the cure period (ensure it is sufficiently long; Project Lenders will expect rights to "step-in" and cure)?
- Termination for force majeure - what is the duration of a force majeure event before termination rights arise?

Termination Risk and Buy-out (2)

- What is the position in the case of Offtaker or Government Authority default (including non-payment, expropriation, breach by the Government Authority or a governmental entity of any project agreements)

- What sums are payable to the Project Company on termination? If compensation is payable, it is usually based on a formula with different amounts payable for different reasons for termination, but lenders will expect to be paid out regardless of the cause of termination.

Preparing and Reviewing Risk Analysis Reports/Market Influence and Precedent

- Review the relevant provisions in all contracts and consider how they interrelate
- Identify problems and inconsistencies (including where provisions are not back to back)
- Consider if the risk will be/can be covered by insurance
- Consider if the risk allocation is fair and in accordance with what is acceptable to project lenders in the market