Appendix: Illustrative List of Typical Project Risk Issues

PROJECT STRUCTURE

Who are you dealing with? What is the specific identity of each participant? Businesses (large and small) are often organized using many separate corporate entities. The businesses usually have legitimate reasons for using their corporate structure, and it is common for certain entities to have little financial strength. It is important to regard each of these entities as wholly separate parties, and evaluate the financial strength of the specific entity that will be a project participant. (e.g., ABC Const. Group may be a large organization, but the specific entity within that organization that will submit the bid/proposal and sign the contract, and its financial capability, is important to the owner; the same logic applies when the contractor looks at the owner, the contractor looks at a sub or supplier, etc.). This issue applies in respect of legal capacity (are the proper registrations/licences in place), execution capability, and financial strength (in case a good track record takes a wrong turn on this particular job).

Tax. Are the right entities being used from a tax perspective? As an example, a corporate entity with no financial wherewithal but a tax advantage may be acceptable if a parental guarantee is used. This might add more "project profit" to be allocated to one or more project participants.

Is a Joint Venture or Consortium appropriate? For example, if the project involves a piece of major equipment (e.g., a turbine or a "black box" process) that will be crucial to the performance of the project, the contractual position of the supplier will be important (e.g., as a sub to the constructor, in a joint venture with the constructor, in a joint venture with the constructor and the designer, etc.).

Is the Joint Venture or Consortium properly structured? Below are some key issues to be considered:

- **Are the members right for each other?** Each member must be satisfied that the other member(s) bring the appropriate skills, knowledge and financial resources to successfully win and execute the work. This decision may involve strategic considerations that transcend the particular deal.
- **Which is most appropriate, Joint Venture or Consortium?** In both arrangements, the members will typically have joint and several obligations to the owner. In a Consortium each member will typically assume responsibility for its own separate scope of work and the resultant profits and losses; in a joint venture the members will typically share profits and losses in some fashion.
- **Should the Joint Venture/Consortium be a contractual relationship or a separate corporate entity?**
- **What is the specific entity that will be the Joint Venture/Consortium member? Will the members exchange parental guarantees?**
- **How will responsibility for the scope and cost of the bid preparation activity be dealt with? For example:**
  - who is responsible for physically putting the bid together?
  - in which office will the bid be put together?
  - who has responsibility for drafting what portions of the bid?
  - how will bid costs (both third party costs and the costs incurred by the members) be paid?
  - what process will the members use to review and approve the bid before it is submitted?
  - what happens if the members can't agree on the bid before it is submitted?
- **How will responsibility for performance of the work be split?** The members should agree on how the scope will be performed as among them. This may range from a very specific allocation to each, to a completely integrated team approach where the members supply personnel based on the best person for the job.
- **Are the members adequately motivated/required to put their best/most appropriate staff on the job?**
- **How will the members split profits and losses?** In order to achieve whatever split is agreed, each member typically agrees to indemnify (hold harmless) the other(s) to the extent necessary to preserve the agreed sharing. These are often referred to as "cross indemnities". They are necessary because it is possible that only one of the members will suffer the loss or liability that is to be shared, and must have a contractual right against the other member(s) to recover the amount necessary to create the agreed sharing. Typically, not all losses and liabilities are shared in a Joint Venture. For example, the members may agree that if one member breaches the Joint Venture Agreement (e.g., failure to supply resources (including cash calls), breach of confidentiality provisions, bankruptcy, claims in respect of intellectual property provided by a co-venturer, etc.) then that member is solely responsible for losses and liabilities resulting from that breach.
- **In a Joint Venture, how are "costs" determined?** The concept of members sharing the profit remaining after costs are paid is simple, but the definition of "cost" typically requires a considerable amount of discussion. This is particularly so where the members carry on business in very different ways, e.g. contractors and engineers.
- **Are there appropriate mechanisms to deal with cash flow requirements and cash distributions?** To execute the work (and to bid it), the Joint Venture/Consortium may initially experience some negative cash flow. The preferred position of the Joint Venture is to have an initial advance or down payment from the client that will eliminate any negative cash flow. If this is not possible, then the Joint Venture/Consortium will have to determine the source of funds, e.g. the Joint Venture/ Consortium borrows money (on the strength of guarantees of the members); the members contribute cash; the members self-finance the portion of work that they have to do; or combinations of the above. The resolution of this issue is obviously project specific, and the relative roles and scopes of the members in the early portion of the work must be carefully considered. For example a "self-funding" mechanism may not be equitable if one member is doing all of the work for the first few months. Typically, any funds received by a Joint Venture are used as the Management Committee decides, but subject to the following order of precedence:
  - To meet the working capital requirements of any shared scope of work (including payment of third parties)
  - To pay the invoices of members which have been approved for payment
  - To return working capital contributions made by the members
  - To make cash distributions, including profits, to the members
- **Are there appropriate mechanisms to deal with the governance of the Joint Venture?** Typically a Management Committee is established as the governing body of the Joint Venture, analogous to a board of directors. The Management Committee delegates some authority for day to day activities to others (for an EPC job, typically a Project Manager and a Construction Manager; depending on the project, there may be different or other delegates). The choice of those delegates, and decisions on all matters not delegated, are those of the Management Committee. The Management Committee should make its decisions within the confines of the Joint Venture Agreement. In other words, the Management Committee should not make a decision that is in conflict with the provisions of the Agreement, and should not amend the Agreement. (The Agreement can be amended by the members, i.e. the parties to the Agreement).

  Typically each member has a representative on the Management Committee. More than one representative, or an alternate, for each co-venturer is advisable, to simplify meeting logistics.

  Each representative of a member (or each group, if there is more than one representative per member), would normally have voting power in proportion to the Proportionate Share of the member that appointed the representative. Some decisions may be made on a majority basis, but certain significant decisions should require unanimity.
- **Are there suitable default provisions?** The events that cause a member to be in default of the Agreement are typically in the following general categories:
  - Failure to respond to a cash call
  - Failure to pay back a member that has paid a cash call on its behalf
  - Becoming "insolvent"
  - Otherwise being in breach of the Agreement, and failing to remedy after notice of the breach is given

- **Are there suitable provisions to deal with confidential information and intellectual property?**
- **Have the members agreed that neither they nor their affiliated companies will compete with the Joint Venture/Consortium in pursuing the project?**

PROJECT EXECUTION

Planned Execution

- Scope Definition (probably the most significant risk issue). Is there adequate language to define expectations and agreements surrounding:
  - "Cadillac v. Volkswagen" disputes
  - responsibility for "new technology" or "black box" components or processes
  - the owner's (and other non-contractor's) obligations (including owner-supplied equipment)
  - training
  - record/as built requirements
  - commissioning
  - manuals
  - consumables
  - spares
  - tie-ins
- Project Execution Plan. Are the following defined (including clear lines of responsibility):
  - general execution strategy
  - cost and schedule baselines
  - an organization chart that demonstrates clear and appropriate lines of authority and responsibility. While an owner often wants a single point of responsibility, the owner is generally well advised to make sure that a suitable and well defined organizational structure lies beneath that point
  - quality plan
  - environmental, health and safety plan
  - project controls
  - project accounting
  - information and communications processes and reporting systems, including:
    - cost and schedule trending and forecasting
    - general project record keeping
    - use of digital photography
    - use of project websites
- Design
  - review/approval requirements and process
  - independent representation for owner?
  - design deliverables
  - constructability analysis
  - definition and timing of interfaces
  - input from operations and maintenance
  - what design elements are most likely to cause a problem? How will those problems be avoided?
  - shop drawing review
  - on-site review by designers
- Major Equipment
  - importation requirements
  - pre-shipment reviews/approvals/testing
- Cost
  - estimate review
  - formal estimate risk analysis
  - contingency
  - soft costs (bonds, insurance, etc.)
- Financial
  - ability to pay
  - cash flow
    - mobilization payments
    - timing/criteria for progress payments
    - holdback
    - currency
    - payments in dispute
  - tax
  - escalation
- Schedule
  - is it achievable?
  - are long lead items accounted for?
  - float
- Experience. Do the project participants (including the project manager, subs, suppliers, etc.) have the experience to perform the work?
- Co-ordination. How will co-ordination with other project participants be accomplished (particularly with participants that the contractor has no contractual relationship with) ?
- Responsibility for permits/licenses/approvals/assessments
- Site issues
  - access (when and in what manner)
  - easements
  - lay down areas
  - security
  - working hours
  - disposal of materials
- Labour
  - availability
  - labour relations
  - project specific agreements
- Handover Protocol
- Intellectual property

Liability for the Completed Work

- performance guarantees
- warranty obligations
  - duration
  - scope
    - relationship to statutory warranties
    - exclusions (e.g., for normal wear and tear/degradation, consumables, operations and maintenance requirements, etc.)
    - costs outside of the actual remedial work
      - rip and tear
      - removal of wreck/debris
- monetary caps on liability
- time caps on liability
- use of liquidated damages/bonuses

Unplanned Events

- pure cost overruns (e.g., poor estimating)
- delay caused by contractor's slow performance (e.g., productivity problems)
- delays in equipment/bulks deliveries
- delay caused by owner
- delay caused by others
- design that is below the standard required by the scope of work
- workmanship that is below the standard required by the scope of work
- accidental destruction of the work (including equipment in transit) that requires rebuilding/replacement (as opposed to negligence or defective workmanship)
- loss/damage/breakdown of equipment/temporary works
- damage to other property
- injury to people
- severe weather
- other force majeure events
- seasonal impact of delays
- labour disruption
  - strikes (both on and off-site)
  - jurisdictional disputes
- labour unavailability
- materials unavailability
- permit/license/etc. unavailability
- severe economic changes
- changes in law, e.g.
  - codes
  - working hours
  - safety requirements
  - taxes
- existing subsurface conditions
  - soils/rock
  - environmental
  - archaeological
- environmental spills
- default
  - insolvency of participants
  - failure/refusal to perform
  - termination/suspension rights
  - security for performance
    - bonds
    - guarantees
    - letters of credit
    - passage of title

Insurance

- will there be a "project program" or will the participants provide their own coverages?
  - are coverages adequate (both in type and limit)?
  - is there double coverage that can be eliminated?
- deductibles
  - appropriate values
  - who pays?
- financing pending insurer payout
- special coverages?
  - E&O
  - delayed start-up
  - efficacy
  - transportation of major equipment
- post completion
  - transfer from contractor to owner
  - duration of coverage

Miscellaneous Legal

- scope change mechanisms
- dispute resolution mechanisms
- governing law
- definition of contractual documents (entire agreement)
- precedence of contractual documents
- corporate changes (e.g., change in control of a participant)
- non-waiver
- confidentiality

Political

- protest
- industrial benefits requirements