

Alternative Construction Delivery Methods

By:

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1. Introduction

One of the key purposes of any contract is to allocate risks and benefits between the parties to the contract. In the construction context, various project delivery methods have been developed to deal with the different ways, owners, developers, contractors, consultants and public entities view and accept risk. For the construction solicitor the objective then is to ensure that the form of contract and its drafting properly allocate the risks associated with the project to the party who has accepted and has been (or will be) compensated for bearing the risk.

In determining who should assume any particular risk in a project the commercial parties need to understand what those risks are and who is most able to control, manage, avoid or mitigate those risks. Their solicitors then are assigned the task of taking the commercial “deal” and drafting language to ensure that the risk allocation is properly reflected in the documents. The solicitors are also responsible for ensuring that their individual clients do not inadvertently accept risk for which they are not being compensated or in relation to which they are not in control.

Project delivery methods have evolved to deal with the many ways in which contracting parties wish to allocate their risk, from the traditional stipulated price/ general contract to the development of alternative financing and procurement methods including P3 models. Each delivery method has its advantages and disadvantages, and it is the role of the construction solicitor to ensure that his or her clients are protected to the greatest extent possible against the risks that they have chosen to accept.

2. Stipulated Price/ General Contracts

In considering alternative delivery methods, it is useful to look briefly at how a traditional project is structured. The traditional stipulated price or general contract project structure relies upon the owner first contracting with the consultant, who is responsible for the project's design, including detailed drawings and specifications, preparation of the bid package or Request for Proposals (where appropriate) and, in some part, for the supervision and administration and certification of the work performed under the construction contract. The consultant's contract is most often a fixed price and date certain contract. Through the consulting agreement, the owner gains the benefit of the consultant's experience and expertise. Once the design has been completed and the work offered for tender or proposal, the owner will retain the general contractor, who is wholly responsible for the construction of the project in accordance with the consultant's design. The contractor under this procurement method accepts

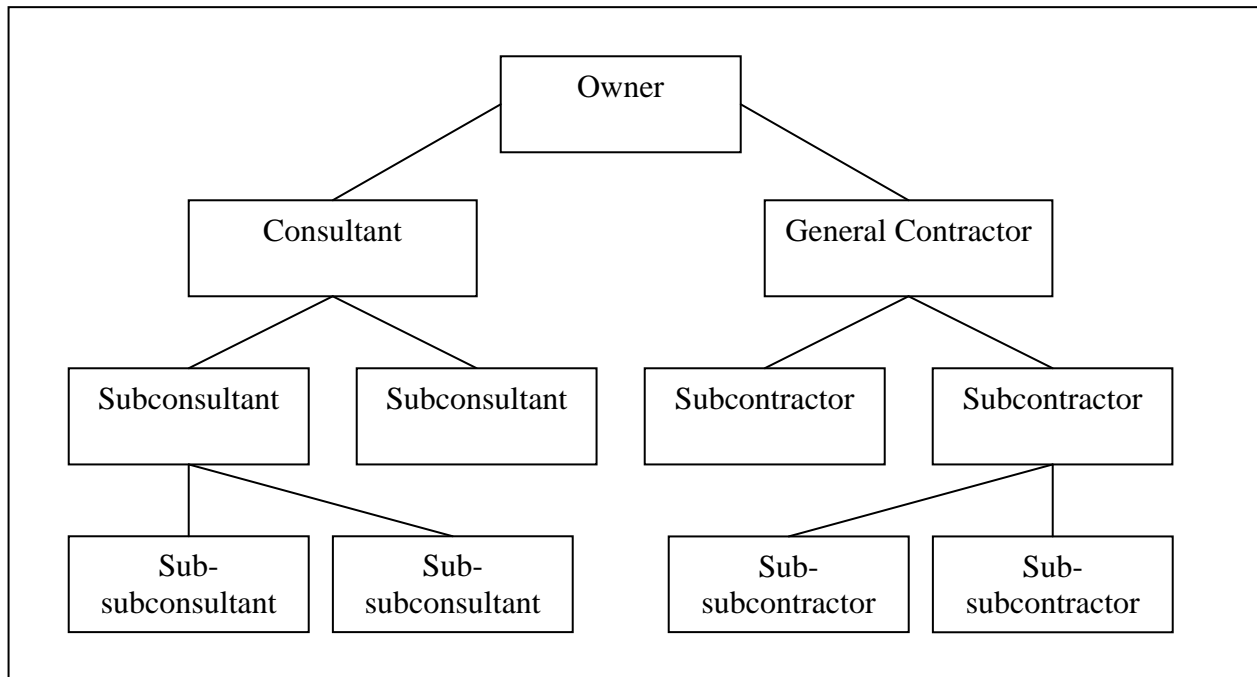


Figure 1 - Traditional project delivery

the responsibility and risks for the construction means and methods and for the performance of the various subcontractors that it retains.

This structure is commonly referred to as a “Design-Bid-Build” project since each of these phases is undertaken separately. Throughout each component of the project, each of the parties will subcontract with various other consultants, trades and suppliers in order to fulfil their obligations. The consultant will often subcontract portions of its scope of work to consulting engineers and architects, including environmental, structural, electrical and geotechnical specialists, who will work collectively to complete the design tasks for which the consultant was retained. In addition, the contractor will retain subcontractors and suppliers of various specializations who will supply labour and materials to the project. The owner reduces its risk by entering into single contracts for each of the design and construction of the project and has a single point of contact in respect of each of these obligations. The consultant and the contractor mitigate their own risks by assigning portions of their scope to subcontractors and assume other risks in relation to the management and supervision of their trades.

The advantages of the stipulated price contract are several. The traditional project structure is the one with which most people are familiar, and most owners, consultants and contractors understand their roles and obligations under this structure. The completion of the design in advance of the bidding process allows for greater certainty for the contractor in fixing the price and for the owner in budgeting and financing the project. As well, standard form contracts have been created to simplify these types of projects and add further certainty and familiarity to the process.

However, the separation of the design and construction phases also has the disadvantage of slowing the progress of the overall project. The contractor and the consultant do not work together on the design of the project, which can give rise to conflicts when the design is being interpreted during construction. In addition, where the consultant also acts as the owner's representative on site, and interpreter of its own design documents an inherent conflict of interest arises. The consultant will have a bias in favour of its own interpretation of the contract documents rather than that of the contractor. Finally, the owner may assume greater risk in this model if it has not adequately accounted for and allocated the risk as between the consultant and contractor.

3. Construction Management

The construction management framework is similar in many respects to a traditional construction contract. The difference comes by way of the introduction of the construction manager, who takes the place of the general contractor and has a modified role. In a

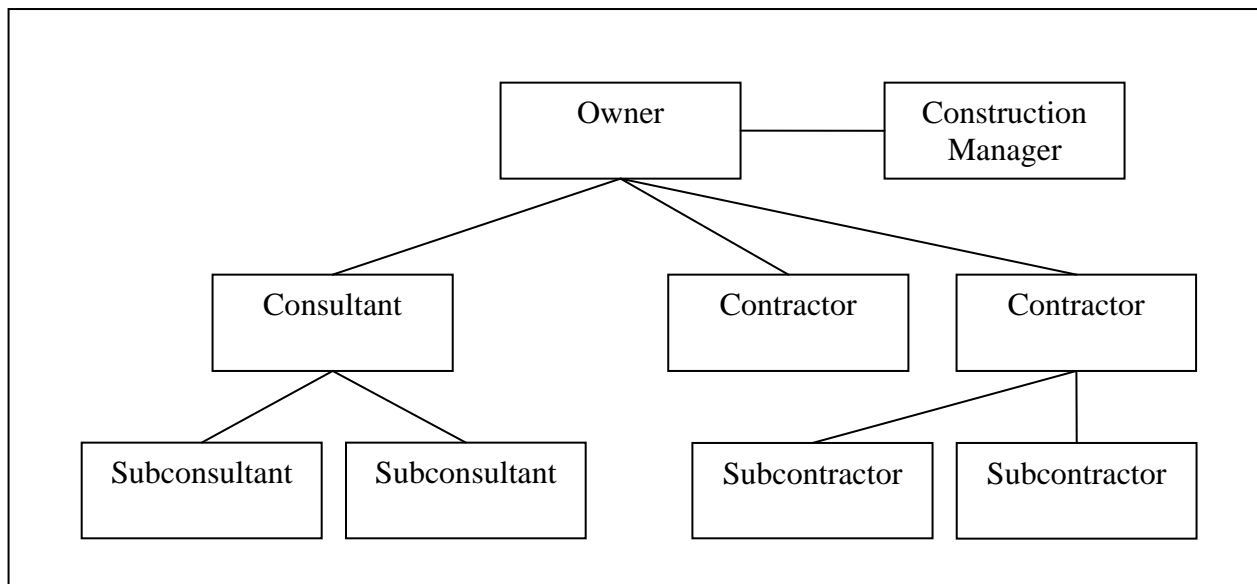


Figure 2 - construction manager Not-at-Risk

“pure” construction management structure, the owner again contracts with a consultant to prepare a design and contract documents. Simultaneously, or subsequent to the completion of the design the owner will also contract with a construction manager as its agent for the management of the project. The construction manager’s role is predominantly one of advisor and administrator. In addition to assisting the owner with tendering and the selection of the various contractors who will complete the work, the construction manager will also administer the trade contracts (a role assumed by the contractor in a traditional project). The construction manager may be responsible for creating the project schedule and may assist the owner in developing the project budget. The owner relies on the technical knowledge of the construction manager. Depending on the expertise and experience of the owner, the construction manager may perform many of these functions with minimal oversight from the owner.

The retention of the construction manager in the early stages of the project allows the construction manager to assist the owner in its interactions with the consultant regarding the design of the project. In addition, a construction manager can begin to engage trades and suppliers for some aspects of the project before the design is completely finalized.

The key difference between a traditional project and a construction management project is that the owner retains privity with the trade contractors and therefore retains the risk for ensuring their contractual obligations are fulfilled. The construction manager acts as the owner’s agent and is typically paid for the cost of its work together with an agreed fee. This structure means less risk for the construction manager, particularly in relation to defects and deficiencies within the subcontracted work. Generally the construction manager is only liable for these deficiencies if they arose from the construction manager’s failure to properly supervise or coordinate the project. For this reason, this structure is also commonly known as construction

manager “Not-at-Risk”. However, as the owner’s agent, the construction manager must operate within the confines of the authority the owner has bestowed upon it. Where the construction manager exceeds its authority, the owner will hold the construction manager liable.

This structure also has the effect of increasing the owner’s exposure to contractual risk arising from the contractual complexity of the project. As the owner essentially takes on the role of the general contractor, the owner assumes the risks of the contractual relationships with the trades. In addition, the owner often provides an indemnity to the construction manager in relation to any claims made by the subcontractors with whom the construction manager contracted as agent. Conversely, under this structure, the construction manager would rarely indemnify the owner for claims beyond those arising from the construction manager’s failure to properly manage the project. The advantage of this structure is that the owner and the construction manager as its agent are, for the most part, aligned in their interests. However, because the construction manager is not directly responsible for the subcontractor costs, there may be little incentive for the construction manager to seek out all possible cost savings.

A common variant of the construction management delivery system is referred to as construction manager “At-Risk”. As can be inferred from its name, the difference here is the nature of the relationship between the owner and the construction manager and the way in which the project’s risk is apportioned between them. While a construction manager “At-Risk” continues to act as the owner’s advisor on technical matters, the owner contracts only with the construction manager who contracts directly with the trades and suppliers. Under this model, the construction manager’s role is expanded and resembles the role of a general contractor in a traditionally delivered project. Specifically, the construction manager assumes two types of risk: the obligation to manage the project and act as the owner’s representative; and, the obligation to

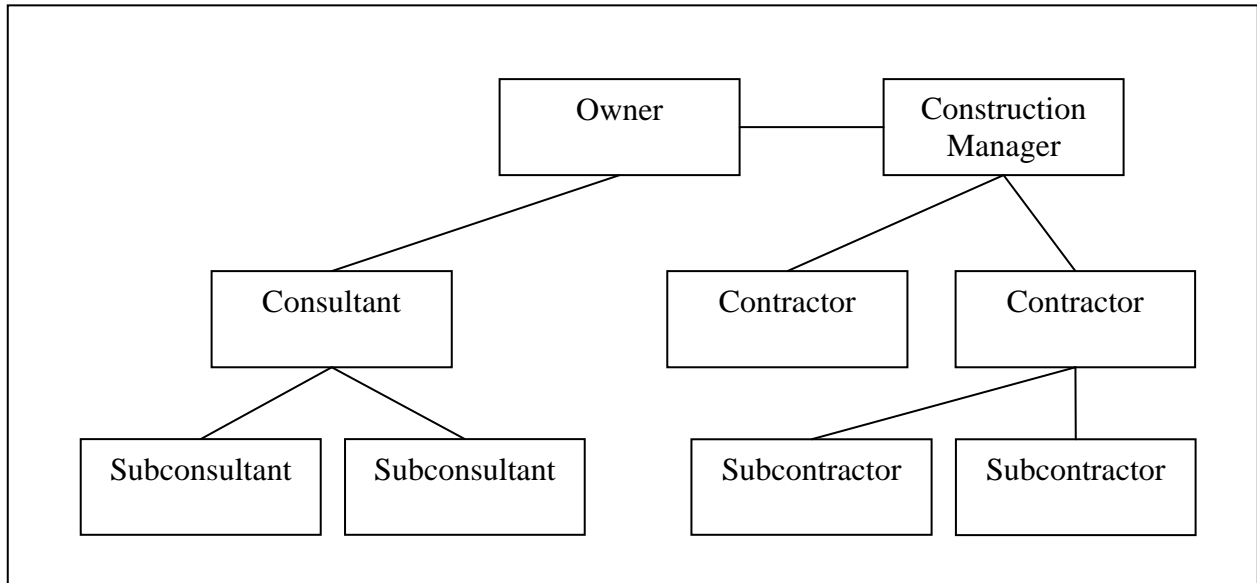


Figure 3 - Construction Manager At-Risk

perform own force's work and prevent subcontractor default. The owner gains the benefit of having a single point of contractual interaction with the construction manager and lessens its exposure to risk.

Construction Manager vs. General Contractor

For owners without expertise or experience in the construction industry, the involvement of a construction manager is usually a benefit. It will be the construction manager's obligation, whether "At-Risk" or not, to guide the owner through the construction process from the very early stages of a project. Some of the major advantages to using the construction management project delivery system are as follows:

- (i) Expertise

The construction manager will be selected for its expertise in relation to technical matters on complex projects. As the construction manager will often be engaged early in the

design phase, it can also provide advice and industrial expertise to the owner in relation to the performance and obligations of the consultant. If provided with access to the preliminary design, the construction manager can assist the owner and the consultant in avoiding the risk that the design has “constructability” issues or will significantly increase the owner’s costs.

(ii) Fast-tracking

Construction management can be used to fast-track a project to completion. As a result of the construction manager being involved in a project from its inception, it may be possible for portions of the work, such as excavation or foundation work, to be tendered and commenced before the consultant’s design is finalized. This effectively allows the work to proceed while the balance of the design is being completed. However, the risk in this approach is in respect of the integration of the ongoing design with the work that has already been performed. The consultant will not have the ability to amend the initial stages of the design, where the work has already been performed.

(iii) Control

With the assistance of a construction manager, the owner is able to exert a significant degree of control over both the project’s budget and schedule. Budgetary control can be augmented by the construction manager’s ability to advise the owner at the design stage of any potential cost or constructability issues and to resolve them prior to the design being finalized. Similarly, the owner and construction manager have significant flexibility to schedule the subcontracted work as needed and as construction advances.

(iv) Cost

Where the construction manager is “Not-at-Risk”, the owner maintains the risk for the subcontractors and for their completion of their work. However, as a result of the owner retaining this risk, it should expect some cost savings as a result.

There are also disadvantages to using construction management:

(v) Complexity

While a construction manager can be of great assistance in engaging and managing the various trades and suppliers, there may be an increase in the level contractual complexity over that on a project delivered under a stipulated price general contract. Despite the involvement of the construction manager in the management of the trades, the owner retains the ultimate risk in relation to the payment of trades and addressing their individual concerns. The owner also bears the risk of subcontractor default. While some of the complexity can be handled by having a construction manager who is actively involved in managing communications with the trades, the owner is still legally bound to each of the contracting parties and subject to the complexity that that entails.

(vi) Cost

As discussed above, the total cost for a construction management project will often turn out to be less than that of a similar project delivered traditionally (depending, of course, upon whether the risks the owner assumes will occur). This benefit however, comes with the caveat that whereas in a traditional project it is often possible to have price certainty as of the bid stage, in a construction management project such price certainty will be rare. Since the

construction manager and the owner are responsible for engaging and negotiating individually with each trade and supplier, it will be nearly impossible to definitively ascertain the total price until all of the trade and supply contracts have been negotiated. In addition, the owner may not be aware of what the construction manager's reimbursable expenses will be at the outset of the project and will have to ensure that these expenses are managed appropriately.

(vii) Risk

Much of the risk that in a traditional project is borne by the general contractor will be borne by the owner in a contract management project. While each of the individual trades and suppliers will continue to be responsible for the completion of their tasks, the owner will be at risk for the completion of the project generally. The owner will typically be responsible for procuring necessary insurance for the project and may also be responsible for providing other project security in the form of bonds or subcontractor default insurance.

Furthermore, since the owner is filling the role traditionally held by the general contractor and, as a result, will be retaining the services of multiple service providers on the site, the owner will incur the added responsibility of being the "constructor" under the *Occupational Health and Safety Act*. This means that the obligations of compliance will rest directly with the owner.

Employing a construction manager "At-Risk" can mitigate some of these disadvantages, though that benefit is tempered by a reduction in the advantages that are enjoyed. While the risk apportionment using a construction manager "At-Risk" is similar to that in the traditional delivery system and it may not be possible to contract in advance with the

construction manager for a guaranteed maximum price. As such, the cost savings that are possible when the construction manager is “Not-at-Risk” will not be available.

4. Design-Build

Under the design-build approach, the owner typically seeks competitive bids based upon a set of project performance requirements or specifications. The owner then retains a single entity who is responsible for both design and construction. This approach has several advantages over more conventional approaches. From a practical perspective, the design and construction companies will be integrated from the very early stages of the project. This integration will provide the opportunity for considerable interaction and discourse between the architect or engineer and the contractor during the design phase of the project. As a result, the project may be expedited. The contractor will be able to commence construction with the understanding of how the design has progressed and how it is proceeding with the potential to save both time and cost.

There is also often a reduction in the number and severity of conflicts between the design and construction entities since they will be, in essence, on the same “team”. While these potential benefits also exist under the construction management delivery system, the increased integration between the designer and contractor under a design-build contract will serve in many cases to augment these advantages. From a risk-allocation point of view, the owner benefits by being able to off-load the design risk as well as the on-time, on-budget and performance requirements to a single entity.

This structure also offers many of the same cost saving features found in construction management projects, particularly those with the construction manager “At-Risk”.

Due to the intersection of the design and construction teams, the project developer can expect cost savings through a more efficient delivery of the project. In addition, since the project is delivered by a single entity with whom the owner negotiates at the outset of the project, it will be possible for the owner and the design-builder to agree upon a fixed price contract for the entire project. This, in turn, may lead to advantages for the owner when negotiating with the project's financiers, who will be more receptive to a project with a lower risk of unanticipated costs.

However, while the potential for cost certainty in the early stages is an advantage, this is tempered by the risks that preliminary specifications can impose on a project. The owner will have less involvement in the overall and detailed design of the project and may only comment on whether the design meets with the general specifications to which the design-builder bid. As well, the design-builder will often be the judge of the quality of its work. It may also be difficult to accurately price a project before the design has been fully completed. For this reason, cash allowances are often built in to design-build contracts.

From the design-builder's point of view, this delivery method adds the obvious increase in risk for the design. Unlike traditional projects where design risk remains with the consultant, under this structure the design-builder will be held liable for an overall failure of the design as well as the defects in construction. Design-builders will also need to ensure that the owner's expectations regarding the finished product, including any specific performance, fitness for purpose or design objects are clear before entering into the contract.

For these reasons, design-build contracts are particularly well suited to so-called "turnkey" projects – those where the owner contracts for a finished product and awaits complete delivery. This is especially true of projects that can be executed from standardized designs that

require little or no modification and can be built to established and proven performance levels. Using this model on such projects will reduce the pricing risk which will provide greater certainty for the owner in relation to the finished product.

5. Engineering, Procurement and Construction Contracts – a Form of Design - Build

Engineering, procurement and construction (EPC) contracts are structured very similarly to the turnkey design-build contract. EPC contracts are commonly used in the construction of larger-scale project-financed infrastructure and energy projects. To take the example of a wind farm project, the project entity, which contracts with the government authority under a power purchase agreement (a “PPA”) to supply power, will then enter into an EPC contract. This contract will govern various elements of the construction of the wind farm from manufacture of the blades and towers and assembly of the nacelles and hubs and construction of the balance of the plant comprising civil and electrical works.

Obviously, other contractual approaches can be taken to construct a wind farm, such as having a separate supply contract for the wind turbines, a separate design agreement and a construction contract with or without a further project management agreement. The choice of contracting approach will depend on a number of factors including the time available, the lenders requirements and the identity of the contractor(s). The major advantage of the EPC contract over the other possible approaches is that it provides for a single point of responsibility and a single point of contact between the project developer and the contractor. As opposed to a more traditional delivery method and the construction management systems described above, EPC delivery systems rely on a single entity that contracts with the owner to design, build and procure the key elements of the project.

This structure is generally preferred by project developers and their lenders because of the project finance structure. This non-recourse (or more often limited recourse) structure means that lenders will be looking for the following key terms:

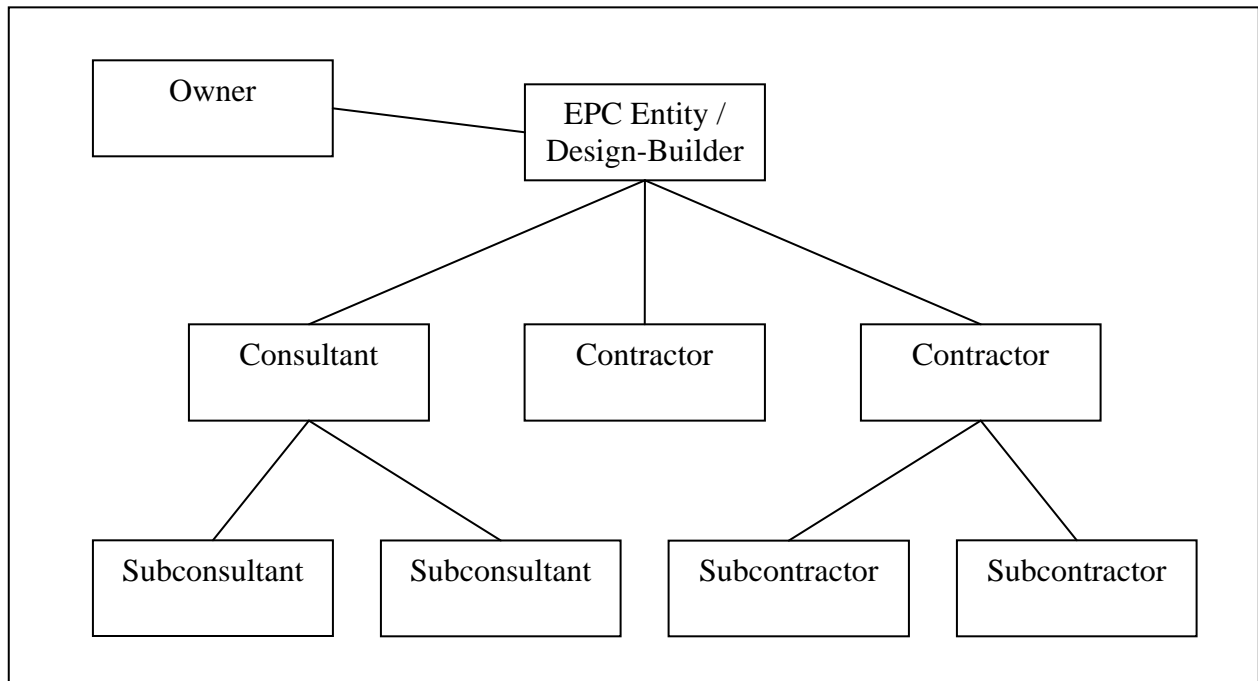


Figure 4 - EPC / Design-Build

- a fixed completion date;
- a fixed completion price;
- no or limited technology risk;
- performance guarantees;
- liquidated damages for both delay and performance;
- security from the contractor and/or its parent

- large caps on liability (ideally, there would be no caps on liability, however, given the nature of EPC contracting and the risks to the contractors involved there are almost always caps on liability); and
- restrictions on the ability of the contractor to claim extensions of time and additional costs.

An EPC contract delivers all of these requirements in one integrated contract. These provisions are crucial to ensuring the “bankability” or “financeability” of a project

One key risk allocation in the EPC contract that distinguishes it from a standard construction contract is the requirement to comply with a performance standard and a performance specification. The project developer will be looking to the EPC contractor to deliver a project to it and to the operator that performs up to the requisite power production standards. Obviously, the performance specification and the performance criteria overlap and a delicate balance must be struck between the two to ensure an effective risk allocation to the contractor. Part of the EPC contractor responsibility will include obtaining compliance certificates in respect of turbine performance and EPC contractors will need to be aware of this and related compliance risks when entering these contracts. In addition, the obligation to meet a fixed completion date may be a difficult challenge if turbines and/or other crucial project components are not readily available. Turbine or solar panel supply contracts may have to be separately negotiated aspects of the EPC contract as backlogs in availability of these items are common.

Another key provision in EPC contracts relates to commissioning and testing regimes. The testing regime under the EPC contract must be set so that it also matches the

testing and commissioning requirements under the PPA. In addition, technical compliance requirements, such as meeting electricity safety standards, are generally the obligation of the EPC contractor, which increases contractor risk.

As a result of the significant risk transfer and the highly technical nature of the subject matter of EPC contracts, many contractors will not undertake them. Any contractor considering an EPC contract should ensure it understands the risks and ensure that its counsel has reviewed the proposed contract in detail.

5. P3 Projects

The advent of public-private partnerships (P3) has altered the risk allocation in public infrastructure projects between parties in both the public and private sectors. While there is a vast array of models for P3 or alternative financing and procurement (AFP) projects, at a basic level all these projects will involve parties from both the public and private sectors and a realignment of project risks (and potential rewards) between the stakeholders. In a typical P3 arrangement the private sector assumes risk that would normally be borne by the public sector on a traditionally delivered project. In the continuum of project delivery methods, a P3 contract shares similarities with the EPC model with owner-like project management and financing obligations added.

The P3 delivery method was developed in the United Kingdom on the basis that they could provide demonstrable value for money and increased accountability compared to either privatization or traditionally procured government infrastructure projects. The advantages for the public sector in entering into a P3 arrangement are several. Generally speaking, the aim of these delivery models is to develop and manage all project costs in an integrated fashion over the

entire project life (construction, lifecycle and operations) in order to achieve optimal cost allocation. In addition, through the various risk allocations set out in these models, the private sector is able to minimize their exposure to cost-overruns, increased financing costs and delay costs. By placing the burden for these risks on the private sector, the public sector achieves its goal of completing large infrastructure project “on time and on budget”. In addition, the public sector may be unable or unwilling to allocate funds to develop a project, or may wish to defer the substantial capital cost of an infrastructure project. Under certain circumstances the private sector may be better able to secure financing for the initial development of an infrastructure project. By enabling the private sector to pick up the front-end costs of development and spread the cost to the public sector over the life of the project, P3 arrangements can increase the capacity of cash-strapped governments to embark on several projects simultaneously. P3s are increasingly seen as a cost-effective alternative to traditionally delivered projects due to the possibility of more creative financing and delivery solutions generated by the private sector entities who bid them in a competitive process.

There are a wide range of contractual structures used in P3 projects. For most analysts, true P3s require two key factors: private sector financing and integrated design and lifecycle obligations. However, as these projects tend to be very large and complex, categorizing them is difficult. It is nevertheless possible to describe some of the typical structures, while noting that many projects will in reality use a structure that falls between, or combines two or more of the following:

(i) Build-Finance

In build-finance projects, the private sector assumes responsibility both for financing and building the project. The build-finance developer is responsible for securing sufficient financing and for working with the contractor to arrive at a viable construction price in order to put forward a competitive bid. Typically, the developer will be a special purpose entity (SPE) who will contract directly with the lenders for the financing of the project and with the contractor for its construction. The SPE is usually a corporate alter ego of the contractor. Only once construction is finalized and certified by both the private lenders and the public sector as complete, will the public sector entity pay for and take ownership of the project.

The build-finance delivery model is the most similar to traditional (non-P3) project delivery. The major differences are that the project is financed by private sector lenders and the borrower is a private sector SPE. While the benefits are the potential for cost savings and risk transfer away from the public sector, one major criticism of this model is that is that the public sector can borrow funds at more economical rates. Particular jurisdictions deal with this concern in different ways and proponents of the delivery system assert that the competitive process, together with the implementation of a transparent risk-transfer model ensures an overall benefit for the ultimate financiers, the taxpayers.

(ii) Design-Build-Maintain (DBM)

Another permutation of the P3 model is the design-build-maintain project. In this scenario the private sector assumes responsibility for the design and construction of the project. After construction is complete, the public sector takes ownership, but the private sector entity continues to maintain the constructed facility under an ongoing maintenance agreement.

(iii) Design-Build-Finance-Maintain (DBFM)

In a design-build-finance-maintain project, in addition to design and construction of the facility, the private sector is responsible for the financing the project. As in the design-build-maintain model, once construction is complete, ownership of the facility goes to the public sector but the facility is maintained privately under an ongoing maintenance agreement.

(iv) Design-Build-Finance-Operate (DBFO)

In another variation, the design-build-finance-operate model sees the private sector, after having designed and built the facility with private financing, continue to operate and maintain it for the duration of the concession period, which may be 30 years or more. Only after the agreement has expired does ownership of the facility revert to the public sector.

(a) Risk allocation overall

In a P3 project, the risk assumed by the private sector participants will generally extend beyond that of a conventional construction project. In a P3 arrangement where the project is financed by a private sector SPE, the risks associated with financial obligations will fall on that entity. However, in order for lenders to loan funds to what is typically a minimally capitalized SPE, sufficient security is required, including such things as assignment of contracts, parent company guarantees, insurance and bonding. Given the complexity of these projects and their economic scale, the transfer of these financial obligations is a risk that only large well positioned developers and contractors can accept. Smaller developers and contractors are not typically parties to these types of transactions.

In addition, depending on the P3 project model implemented, the responsibilities of the private sector participants will often extend well beyond the construction phase of a project into maintenance or operation of the facility. The extended duration of these projects gives rise to additional risk for the developer participants.

(b) Risk transfer to the contractor

With respect to construction risk, the contractor will be responsible for the usual risks associated with any project. These obligations will include defects and deficiencies in construction, scheduling issues, site health and safety, labour, materials and construction equipment. However, since P3 projects tend to be projects of a significant size (i.e. hundreds of millions of dollars), there is an increased risk on the contractor to accurately price the scope of the work. A mistake in pricing could have serious impact on even the most robust contractor.

Additionally, the contractor may become responsible for bearing additional risk that arises as a result of the unique nature of the P3 arrangement. The contractor will often be asked to take on risks related to site conditions, resource availability, equipment procurement and installation, permits and approvals, labour, changes in law and force majeure, which risks under a traditional project would have remained with the owner.

Moreover, since the private sector's involvement in the project will often last much longer than the construction period, as in a P3 with a maintenance or an operational concession period, the risks relating to the ongoing private sector involvement will need to be apportioned among the private sector participants. It will be the objective of the solicitors involved in structuring the project to align these risks with the party most able to manage and mitigate them. Some of the risk will fall to the contractor, even though its direct involvement in

the project might otherwise end with the facility's successful construction. While the contractor will sometimes remain involved in the project during the concession period, in a maintenance capacity or otherwise, the contractor typically retains all risks associated with construction warranty obligations and latent defect issues. The contractor's involvement may also be protracted where the contractor has an interest in the SPE.

Lenders will want to ensure that very few to none of the risks transferred to the SPE through the P3 agreement are stranded in the SPE. Obviously, as risks are "dropped down" from the SPE to the construction company and the operator or service-provider, there exists a requirement that the transferred risks be covered appropriately between the operator and the constructor. This is addressed by way of an interface agreement between the key contracting entities within the project structure. The interface agreement and the respective dropdown agreements will also include an "equivalent project relief" provision, which contractors should understand. The EPR principle is simple in concept and may be challenging in practice: the construction contractor and service provider are only entitled to relief under their respective agreements to the extent that the SPE obtains any relief under the main project agreement.

(c) Contractor as consortium lead/participant

The risks and responsibilities assumed by the contractor will vary depending on the role that it plays in the consortium of private sector participants engaged for the project. Where the contractor assumes the dual role of developer/ contractor or that of lead member of the consortium, it will be exposed to additional risk and carry additional responsibilities.

The contractor, acting as consortium lead, will often take primary responsibility for negotiating the terms of the arrangement between the consortium and the public sector entity.

Among other things, this will entail negotiating with consortium team members, including equity contributors and service or operations subcontractors. The contractor may also be involved in retaining the various professional advisors including consortium counsel, financial model auditors, tax advisors, accounting advisors, lender counsel and lender technical and insurance advisors. Further, the consortium lead will often be responsible for developing term sheets and negotiating final credit and equity contribution agreements with the project's financiers.

One issue that contactors and their counsel will need to pay particular attention to occurs when a contractor has an equity stake in the consortium. Here, there is the potential for a difference in interests between the contractor as contractor and as equity participant. The equity in the deal will want to ensure that as many risks are passed onto the contractors as possible so that obligations of damage repair, for example, or liquidated damages are met by the responsible contractor and not by equity injections.

(d) Subcontractors

Due to the strict timelines and technical expertise required in many P3 projects, highly specialized subcontractors will often be required. For these large scale projects, particular subcontracts including those for the mechanical and electrical work which may be a significant percentage of the overall cost of the project, with subcontract values of \$50 million or more. As such, the expertise and experience of these subcontractors or suppliers will be essential for the successful and timely completion of the project. It will therefore be of critical importance to ensure that the construction contract and subcontracts have a mechanism to address the withdrawal or default of such key parties. The contractor will also often look for substantial

security from these subcontractors, in the form of bonding, insurance, indemnities and liability for liquidated damages arising from their delay.

(e) Design risk

Except where the public sector takes responsibility for the design of the project, as in the build-finance model, the design risk will also fall to the private sector participants. The proponent will assume responsibility for the constructability, completeness and coordination of the design, as well as any conflicts or interferences in the design documents. Depending on the structure of the consortium, the design risk might be allocated to an architect/engineer, or shared more widely amongst the participants. However, regardless of who is responsible for design risks, a project that calls for an ongoing maintenance or operational component, will increase the risk assumed by the design professionals, particularly as it relates to “fitness for purpose” requirements. A poorly designed project might, for example, perform acceptably but have exorbitant maintenance costs, placing disproportionate burden on the party charged with ongoing maintenance. Ensuring that the risks associated with the ongoing consequences of the project’s design are assigned to the appropriate party will ensure that the parties in the position most able to offset the risk are those who have the incentive to do so.

(f) Key differences in role of architect/consultant

Under the P3 model, the public sector will transfer to the private sector not only the risk of the design of the project but also the administrative oversight of the project, the role typically assumed by the consultant. The project consortium will be responsible for retaining on behalf of the owner a consultant or independent certifier who will act as the owner’s representative during the course of the project and who will provide to the owner reports and

evaluations on the work being performed. The independent certifier will also advise the owner with respect to whether the project is on schedule and whether any significant problems have arisen during construction. In addition, the independent certifier may have a role to play in the resolution of disputes between the consortium and the government sponsor of the project.

However, because these projects are typically financed privately, the owner's independent certifier will not be the payment certifier for the project. The consortium will be required by its lenders to retain an independent third party valuator. This valuator, or technical advisor will be retained in the early development of the project and will also undertake responsibility for thorough due diligence and oversight to ensure problems are identified and resolved. The lenders' technical advisor will be responsible for ensuring that the work performed is in accordance with the contract documents, for certifying payments and for confirming the achievement of particular project milestones, including substantial performance of the work.

Conclusion

The varying ways in which risk can be transferred to a construction contractor is limited only by the creativity of counsel and the relative bargaining power of the contractor and owner or developer. However, in certain areas – such as P3-based public infrastructure procurement and energy development – certain contractual models have evolved which include significant new risk for the unwary contractor. Understanding the basic structure and getting good advice – before you sign on the dotted line – are crucial elements of ensuring that the project is priced accurately and that only the appropriate risks are assumed.