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Turnkey Construction Contracts in Construction and Infrastructure Projects: An Introductory Overview

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Abstract

Turnkey construction contracts have during recent time acquired considerable popularity in the construction, engineering and infrastructure projects sector all across the world. These contracts contain certain singular features in terms of risk allocation, relationship between the employer-party and the contractor-party, pricing mechanisms and several others. In course of this paper, the author would aim to introduce the concept of fixed price turnkey construction contracts, their various features, the purposes for which they are used, the reasons why these contracts may be preferred over their other counterparts in construction and projects, the various drawbacks of using such contracts, the way around some of those drawbacks and some of the standard form model contracts that are in vogue. The author would also consider the validity of the statement of such contracts being the future of the construction industry and the various approaches that the parties might adopt when it comes to execution of such contracts.

Keywords: *Turnkey contracts, construction, project finance, EPC contracts, risk allocation, employer, contractor*

I. Introduction

The entire concept of a construction contract hinges around having a legal arrangement whereby one of the parties (usually referred to as the contractor) is consenting to assume the responsibility of constructing one or more buildings or facilities for the other party (usually referred to as the employer) in return for consideration (the quantum of which would be decided at the time of formation of the contract) within a certain duration of time (again, decided at the time of the contract formation).[2] Either of the parties to such a contract may be in a superior bargaining position depending on the specific circumstances surrounding the contract; based on that, said party may seek to leverage its

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[2]GRAHAM D. VINTER& GARETH PRICE, PROJECT FINANCE: A LEGAL GUIDE, (3rd edition, 2016)

position to negotiate contractual terms and conditions favourable to itself –this practice has over the years led to the formation of a wide variety of standard form construction contracts. The purpose of a standard form contract is to seek to level the playing field to a certain extent between the parties regardless of their respective bargaining positions and thereby encourage said parties to agree to contractual terms that might be perceived as fairer and more balanced than any outcome that might have been produced in the absence of such standard form contracts were the parties to rely upon negotiations entirely. Fixed price turnkey construction contracts (hereinafter referred to as "TCC"), which form the subject matter of discussion of this paper, are considered as an exception created to this practice of using such standard form contracts in the context of construction projects – one of the key features of such turnkey contracts is an apparent transfer onto the contractor of an amount of risk that is greater than the usual practice.[3]

There exist several definitions of a TCC according to international standards prevailing in the arena of projects and construction; one of them for instance refers to it as *a contract under which the contractor is responsible for both design and construction of a facility*,[4]*and is obligated to complete the project according to the prescribed criteria for a price that has been fixed at the signing of the contract.*[5]Mention may further be made in this context of the so-called turnkey responsibility that Wiven Nilsson referred to in course of his deposition before the IBA/SBL Turnkey Contracts for Heavy Plant Sub-Committee, consisting of liability for *inter alia* the technology involved in the process, designing and engineering, procuring and manufacturing the needed machinery and other assorted equipment, arranging for transports to and from the project site, erecting construction, training the personnel involved, coordinating and managing the overall project, catering to civil works for the process plant, and finally, commissioning and starting up the project facility.[6]

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[3]*Ibid*.
[4]MICHAEL E. SCHNEIDER, *TURNKEY CONTRACTS; CONCEPT, LIABILITIES, CLAIMS*, I.C.L.R., Vol 3, 9781859788028,11, (1986).
[5]CAMPBELL HARVEY, TURNKEY CONSTRUCTION CONTRACT, http://financial-dictionary.thefreedictionary.com/Turnkey+Construction+Contract, (Last Visited on October 20, 2019).
[6] Tore Wiven Nilsson, Memorandum to IBA/SBL Heavy Plant Turnkey Subcommittee, March 11, 1987.

In the industry parlance, TCCs are also commonly referred to as the "package deal", "design and build" or "Engineering, Procurement and Construction (EPC)" contract[7].The exact significance of the term 'turnkey" is that this kind of agreement imposes upon the contractor an obligation to assume liability for the entire design and construction, with the only thing left for the employer to do is to merely turn his key so as to commence operation of the constructed facility at the end of the contractual period.[8]Thus for the employer, a TCC leads to considerable reduction in terms of the risks involved in the context of the construction, whereas for the company that assumes the responsibility for construction, a TCC would also lead to motivation to operate within the budget parameters allotted at the onset of the contract.[9]

In course of this paper, the author would seek to explore the different features of a TCC, extrapolating upon the components and application of these contracts, the standard forms and governing regulations, the general advantages of selecting a TCC as well as specific reasons that may motivate certain parties, as well as the shortcoming of such contracts and possible ways to mitigate such shortcomings to commercially acceptable levels.The entire examination is premised on an effort to determine the commercial viability of TCC in the context of construction business and project finance.

II. Turnkey Contracts: Features and Usage

While there are several variants of a TCC that are in vogue in the construction sector, most of them broadly feature at least three main aspects, *viz.* the manner in which the facility to be constructed is to be designed by the contractor (this may be delineated in the TCC itself, or separately mentioned in a different preliminary agreement), the different forms of technology and associated intellectual property (hereinafter referred to as "IP") that may be involved in the

[7]In India, EPC contracts have been in vogue for quite some time and have even formed subject matter of judicial scrutiny, for instance in cases like *Linde AG, Linde Engineering Division &Anr v. DDIT, (2014) 365 ITR 1 (Delhi).*

[8]JOSEPH A. HUSE, UNDERSTANDING AND NEGOTIATING TURNKEY AND EPC CONTRACTS*,* (3rd edition, 2002).

[9]FARLEX, THE FREE FINANCIAL DICTIONARY, http://financial-dictionary.thefreedictionary.com/Turnkey+Construction+Contract(Last visited on October 20, 2019).

entire process (including but not limited to the patents and the design or other forms of know-how that might have to be licensed or acquired by the contractor either from the employer or from third party outsiders), and the specific nature of the obligations assumed by the contractor (these may include the various supplies, construction and erection involved in the project).[10]The employer also has certain responsibilities of his own, such as the obligation to pay in time the contractually stipulated price to the contractor, as well as not to cause any hindrance to or delay in the contractor's performance of his own contractual obligations.[11]The contractor may also request the employer to exhibit evidence of his ability to pay the said price in advance. At the same time, a standard TCC usually mandates the contractor to design, procure, supply, execute, commission, test and complete the entire construction (often collectively referred to as "works") and provide suitable solutions to any defects that might be spotted in course of performance or post-performance for a specified period, as laid down in the contract, with appropriate level of diligence.[12]

While a TCC is ordinarily perceived as a species of design and build contract, yet in the international arena, it may often display an enhanced scope and involve schematic usage of utilization of various forms of IP by the contractor,[13]especially in the context of projects involving TCC that consist of large-scale civil engineering construction on the one hand and installation of heavy-duty and/or intricate mechanical and electrical implements on the other.

As has been mentioned earlier, there can be more than one variation to a turnkey project wherein the contractor is supposed to be overall liable for the design, supply and execution of the work following the execution of the contract between him and the employer. Two such variations of considerable importance that deserve mention in this context are the Build, Own and Transfer model (hereinafter referred to as "BOT") and the Public-Private-Partnership Initiative or the Private Finance Initiative model (hereinafter referred to as "PFI"). The

[10] Schneider, *supra* note 3.
[11]ICC Model Turnkey Contract for Major Projects, 2007, Article 13, http://store.iccwbo.org/content/uploaded/pdf/ICC-Model-Turnkey-Contract-for-Major-Projects.pdf, (Last visited on October 22, 2019).
[12]*Ibid.*
[13]M.P. O'REILLY, CIVIL ENGINEERING AND CONSTRUCTION CONTRACTS, 62 (3rd edition, 1996).

former involves the contractor availing of the right to be responsible for the operation of the completed project for a specified duration following construction, at the end of which the project gets handed over to the original employer. The latter is a rather popular model used by the State or by individual government departments to procure necessary finance for a certain public project from private players, in a manner that will not necessitate the project expenditure to be reflected in the government balance sheets as debt incurred by the State.

When it comes to projects having global or cross-border dimensions, especially construction and infrastructure projects, the popularity of TCC has witnessed exponential growth over the recent years, with the State often preparing to retain overall project ownership and eventual control, but at the same time is not averse to hand over responsibility for construct and management to the private sector. Sectors such as public buildings, hospitals, stadia, municipal facilities including water and sewage etc. serve as prominent illustrations of this trend.[14] In such projects, while the State may often put up the bulk of the finance, it is still the private contractor who would normally have the overall charge for the design, construction and management of the project for a specified duration (may be either short-term or long-term).[15]The ownership of the project would usually remain with the State and the contractor would still be mandated to adhere to publicly prescribed performance standards and objectives. There are several highly reputed global institutions engaged in infrastructure development including the World Bank, the European Bank for Reconstruction and Development (hereinafter referred to as "EBRD") and the like, which have displayed preference for TCC owing to the way that such contracts can be used to bring down the level of the risk that such institutions expose themselves to. Even under circumstances where the State is fully equipped to provide the necessary finance for a project, TCC may provide an attractive opportunity from the point of affixation of liability owing to its single-point treatment of said liability, as well as from the point of having a set of staff trained under similar parameters and as a functional team.[16]

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[14]*Ibid*.

[15]STEFANO GATTI,PROJECT FINANCE IN THEORY AND PRACTICE,DESIGNING, STRUCTURING, AND FINANCING PRIVATE AND PUBLIC PROJECTS, 47 (2nd edition, 2012).

[16]O'REILLY, *supra* note 12, at 70.

III. TCC: Regulatory Environment

Most of the EPC projects all over the world, especially those having international dimensions, make use certain boilerplate clauses and features when it comes to TCC. One of the common sources utilised for this purpose is the so-called Orange Book and the Silver Book Contract published by the Federation Internationale des Ingenieurs-Conseils(hereinafter referred to as "FIDIC"); highly regarded among the international community of legal experts in the construction and project finance sectors (including those in Australia, England, Brazil, Canada, India and UAE), these documents are meant to form the basis for inter-party arrangements in the context of TCC and have also been adopted by several global associations of consulting engineers.[17]Some of the key features of the Silver Book model discusses clauses such as the employer's obligation to provide access to project site, to help the contractor procure the necessary permits and licenses, payment of contract price in time and furnishing adequate evidence of payment capacity, as well as the contractor's mandate to obtain said licenses, frame designs, provide the employer with adequate guidelines for operations and maintenance, provide security bonds as performance warranty, ensure turnkey performance, furnish solutions to defects in the facility as per the contract, assume risks for even unforeseen difficulties for an agreed upon price, damages in the event of delay or reduction in contract price for performance failure, the procedure of possession of facility and operational control by the employer, trigger events for employer's intervention, price modification, change in laws, indemnity obligations, right of suspension or termination of the contract, risk allocation, limitation on liability, force majeure events and finally, dispute settlement as per ICC Arbitration Rules etc.[18]

There are other sources that are also commonly acceptable, such as the model agreements adopted by industry bodies comprising engineering conglomerates

[17] PRACTICAL LAW, ARE FIDIC CONTRACTS USED COMMONLY IN YOUR JURISDICTION FOR INTERNATIONAL PROJECTS? https://uk.practicallaw.thomsonreuters.com/1-519-0075?transitionType=Default&contextData=(sc.Default)&firstPage=true&bhcp=1 (Last modified on January 1, 2016).

[18]PIERRICK LE GOFF, NEW STANDARD FOR INTERNATIONAL TURNKEY CONTRACTS: THE FIDIC SILVER BOOK, http://fidic.org/sites/default/files/New%20Standard%20for%20International%20Turnkey%20Contracts.pdf (Visited on October 28, 2019).

and players in the construction industry, such as the Engineering Advancement Association of Japan (hereinafter referred to as "ENAA") and the European International Contractors (hereinafter referred to as "ECC").[19]One of the most renowned model templates provided in this context is that provided by the International Chamber of Commerce (hereinafter referred to as "ICC") in 2007, also known as the ICC Model for Major Turnkey Projects; this has over the past decade come to be established as a balanced template safeguarding the myriad interests of the various parties involved in a TCC and seeking to cater to minimise uncertainty in contractual matters such as pricing and scope of performance, to provide mechanisms for expedited and efficient resolution of disputes to the satisfaction of the parties involved, and also to allocate the different categories of risk among the parties in an informed and holistic fashion, all the while reducing the need to depend upon the domestic legislations involved to the greatest extent possible.[20]Having said that, it is quite possible for the parties to a TCC to allow the domestic legislations of the applicable jurisdiction to be the *lex loci* for the TCC, a practice that may even make room for adoption and interpretation of locally prevalent contractual norms and customary practices as applicable.

IV. Why Choose a TCC?

There are several significant advantages that the parties to a TCC may avail of, provided that the contract and the terms and conditions related thereto have been designed, drafted and executed according to acceptable standards in vogue. Some of these have been discussed in brief in the following part of this paper.

First, the employer is armed with the knowledge of the entire project-related liability (at least in the construction phase and perhaps also in the initial operational phase) being focused on a single source, represented by the contractor. Therefore, in the event of any inadequacy in performance, the employer is usually protected against such liability and the contractor be made

[19]O'REILLY, *supra* note 12, at 70.
[20] JOHN DEWAR, INTERNATIONAL PROJECT FINANCE: LAW & PRACTICE (JOHN DEWAReds, 2nd edition, 2015).

to assume all responsibilities related thereto.[21]In other words, the contractor has the contractual obligation under a TCC to deliver the plant (or whatever other form the project may take) to the employer in such a manner that the said plant is capable of fulfilling all the technical functions that it is supposed to according to the terms of the contract. Once he does that, he retains no further liability unless otherwise specified in the TCC (some contracts may require the contractor to provide additional warranties for the proper functioning of the facilities for specified periods after the employer has been handed over the possession thereof).

Secondly, one ought to consider the various results stemming from the aforementioned structure of relationship. Performance criteria should play a significant role in TCC, as should the stipulated standard of performance that the contractor is supposed to live up to.[22]The latter should adhere to the criteria specified in the contractual clauses to the extent reasonably possible given the circumstances and by corollary, the facilities being constructed should also be able to exhibit the necessary level of functional capacity (by way of production etc.) as needed for the employer to break even at the very least and preferably show a profit.

The contractor may end up assuming the risk for both construction and design of the project in an EPC contract and hence may incur any liability only on the basis of how far his work might have deviated from the contractually stipulated performance and quality tests. In case the employer provides specific sets of instruction, then the contractor may take that as defence provided he has adhered to such instructions; however, too detailed instructions might actually lead to the risk being once again reverting to the employer and hence would usually be avoided by the latter. Under Common Law standards, the contractor's liability will be strict in case he fails to deliver a facility that is fit for the purpose for which it has been constructed.[23]However, an EPC contract can prescribe even higher standards, to the extent that the contractor may be required to go beyond mere professional duty of care insofar as determination of

[21]UNITED NATIONS CENTRE ON TRANSNATIONAL CORPORATIONS, FEATURES AND ISSUES IN TURNKEY CONTRACTS IN DEVELOPING COUNTRIES: A TECHNICAL PAPER, http://unctc.unctad.org/data/e83iia13a.pdf, (Lat visited on October 28, 2019).
[22]DEWAR (ed.), *supra* note 19.
[23]*IBA v. EMI and BICC*, 14 B.L.R.1. (1980).

the aforesaid fitness is concerned; what this means is that for any manner of design fault or inadequacy, the contractor is most likely to incur liability.

Time-bound efficiency in the context of construction is usually expected from a contractor in relation to a TCC more commonly than his other counterparts, chiefly because he is the sole decision-maker when it comes to both design and construction and hence can make more expedited calls to synchronise and harmonise both sets of activities. As a result, the employer is not having to award two separate contracts for design and construction (latter cannot usually happen before performance of the former is completed in such cases), which saves considerable time and resources in the context of public procurement and an authority that may have to cater to political factors including wielding power for only a limited period owing to regular elections. Such an advantage may often compensate for the relative loss in control that the employer is subjected to when it comes to design or construction. This entire process of 'fast-tracking' is a distinct advantage of the TCC model.[24] Further, the same party taking responsibility for both design and construction means that any potential flaw in design is more likely to be discovered in the early stage of construction and hence relatively easier to get rectified for an overall lesser cost; consequentially, the risks associated with such flaws and by corollary the risks arising from the relationship between the employer and the contractor may also be better managed.[25]

Another main reason behind the growing popularity of the TCC model is the aspect of finance for the project or to be more precise, the preference of global financing organisations such as the EBRD for lump-sum TCC projects for the purpose of building and maintaining infrastructure. Such preference together with the single-point liability system makes it easier for the employer to manage project completion risk and reduces the uncertainty associated with the financial exposure that the employer is subjected to when it comes to arranging for finance for the project concerned.[26]

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[24]TONY GIBBS, *AN ASSESSMENT OF TURNKEY CONTRACTS FOR THE REALISATION OF CAPITAL WORKS PROJECT*, The Pan American Health Organization, The United States Agency for International Development, November 2008.
[25]GATTI, *supra* note 14.
[26]VINTER, *supra* note 1.

Yet another advantage of the TCC model comes into prominence when the contractor assumes the responsibility for initial operation apart from the construction. Under such circumstances, whatever initial problems that a newly operational facility usually faces are also taken care of by the contractor and by the time that the employer is handed over the project, most of those problems are either taken care of, or at the very least the employer inherits a staff well-trained to manage and deal with such problems on a daily basis.[27]

Last but not the least, another oft-seen benefit that stems from a TCC model project is a fillip that it may give to innovation and creative solution-oriented approach to problems, with the combined entities of designer and builder (manifested as the contractor) being able to tackle design issues with the added benefit of sound and practical construction knowledge.[28]

Apart from the aforementioned benefits that may result from an ordinary TCC, there are several other potential advantages that are not being discussed at present which may also bring added impetus to the increasing popularity of this model, such as the relative comfort that the employer may find in entrusting the designing and construction to a capable and experienced contractor especially when the employer's own in-house experts might be lacking in necessary capability or experience when it comes to a particular category of project.

V. TCC: Shortcomings

It is not as if the TCC model and the projects relying on the same are immune from problems and shortcomings of their own. Depending on the party objectives and other associated circumstances, there may arise factors that may dissuade opting for such a model in relation to a construction or infrastructure project.

Ordinarily, an engineer plays a pivotal supervisory role in the designing and construction phase in a project; yet, in a TCC, the engineer can at best hope to function as the representative of the employer with little to no oversight or veto

[27]UNCTC, *supra* note 20.

[28]OVERTON A. CURRIE, TURNKEY GOVERNMENT CONTRACTS—WHO'S WHO AND WHAT'S WHAT, 8(1) (The Forum of American Bar Association. Section of Insurance, Negligence andCompensation Law, 125 1972).

power during such phases, depending on the contractual clauses. Unlike other forms of contracts, the employer gets to intervene in such cases rarely if at all and may even choose to do away with the engineer's role, to the effect of insulating himself from a thorough understanding of the technical issues involved, which may in turn adversely affect his decision-making powers and the suitability of timing in exercise of such powers.[29]This may lead to the contractor seeking to compromise with the quality of the design in a manner that is not apparent at least during the construction phase but would still lead to lowering of costs on the contractor's part. In the absence of regular and effective oversight, by the time the employer might end up realising this, the liability period binding the contractor might already have come to an end, thus leaving the employer with little or no recourse.[30]There are, however, ways to address this problem, including the employer retaining at least regular supervisory power throughout even the construction phase (exercised through his engineer representative), with certain specified events acting as triggers for intervention.

If the project's nature demands a subsequent design modification, then the employer may end up incurring additional maintenance costs eventually and his profit expectations may get adversely affected in the long run, chiefly because the contractor would only be contractually bound to adhere to the original specifications as stipulated under the contract for the price agreed upon originally. A possible way out of this is to always require the contractor in a TCC to operate the facility for a certain period after the completion of construction and make him recover a part of the consideration payable to him from the project revenue obtained therefrom. That way, the contractor would have an additional incentive to smoothen any possible design defect and produce a functional facility capable of generating revenue and potential profit for the lowest level of maintenance possible.[31]

Since the contractor assumes all the design risks in a TCC model, it stands to reason that before bidding for any tender that may lead to finalisation of such a contract, he would like his design solutions to undergo at least preliminary level tests on various fronts –this in turn is bound to drive up the expenses incurred in

[29]GIBBS, *supra* note 23.
[30]*Ibid*.
[31]M.L. McALPINE, *CONSTRUCTION LAW: WILL DESIGN-BUILD CONTRACTING REALLY SOLVE ALL OF THE PROBLEMS?*76 MlBarJnl. 522(1997).

the bid-submission phase.[32]To counter this problem, suggestions have been made by expert financiers including international organisations such as the World Bank to restrict number of bids to a ceiling of six at the most, with technical ability and price competitiveness being considered as primary criteria for selection.[33] Further, the employer can always incentivise bidders by compensating them in case of competitive and well-prepared bids, which will of course act as an additional motivation for the parties intending to submit serious bids for the tender. The employer may also end up incurring significant costs for design verification; such resource expenditure coupled with the bidder-contractor's tendency to under-design at least at the tendering stage may end up making the TCC quite expensive at the awarding and formation stages. So that the employer does not succumb to the temptation to accept the bid based only on its attractive pricing package, further suggestions have been made to segregate the bidding process into two halves, with technical proposals being submitted and shortlisted in the first half and the pricing factor being introduced only in the second half after the bids have cleared the technical hurdle. According to this approach, the entire bidding process may thus consist of stages such as pre-feasibility, feasibility, bidding, evaluation of bids and award of contract, and negotiation.[34]

Even more importantly, the contractor is not simply going to accept additional risks that the employer may wish to pass on to him as per the standard TCC objective; depending on his bargaining power, he may demand a higher price in exchange for such higher risk assumption. It will then depend on the prevailing competition level among the bidders (potential contractors) as to how much additional cost the employer may end up having to pay for not having to assume its own due share of risks; this in turn represents a risk on the part of the employer.[35]Further, if different parts of a project are subjected to different TCC, then the additional costs would also be further compounded. Given that the cost negotiations usually take place about the entire technological package bundle, it may be well-nigh impossible to estimate additional increase from the marked-up

[32]HUSE, *supra* note 7.
[33]G. WESTRING, *TURNKEY HEAVY PANT CONTRACTS FROM THE OWNER'S POINT OF VIEW* (1990) as seen in Huse, *supra* note 7 at 24.
[34]*Ibid*.
[35]JEFFREY DELMON, PRIVATE SECTOR INVESTMENT IN INFRASTRUCTURE: PROJECT FINANCE, PPP PROJECTS AND RISK(3rd edition, 2015).

costs at specific stages. The overall increase may well turn out to be sufficient to offset any financial advantage that may arise from opting for a TCC model in the first place and that is something the parties should keep in mind at the start of choosing this contract over its other counterparts.[36] Both the fixed cost (or the lump-sum approach) and the variable cost models may be susceptible to such pricing risks, albeit to varying degrees.[37]There may arise additional problems depending on the domestic legal regime of the concerned jurisdiction of the project, such as the Construction Contracts Act, 2013 of Ireland, which provides vide Sections 2 and 3 for a possibility of a conflict whereby the employer may insist that a contractor is not entitled to any payment until the construction phase is complete, whereas the latter may insist on partial payments in course of multiple points during the said phase.[38]

Therefore, the author may be allowed to opine at this juncture that while the TCC model has its own benefits and shortcomings, there are certain factors on which it would depend which category might outweigh the other in a certain context –of such factors, the nature of a certain project, the surrounding circumstances, the relative bargaining power of the parties involved and the economics (mostly demand-supply conditions) of the markets for employers and contractors are some deserve a mention; it is on the basis of the strength of such factors that the pricing and commercial viability of a TCC ought to be determined and perhaps even pricing adjustment clauses may be used as and when appropriate to mitigate any adverse impact of such factors[39].

V. Conclusion

It is a reality of today that the TCC model is here to stay in the construction and infrastructure sectors, whether in their original form or in the modified versions

[36]UNCTC, *supra* note 19.
[37]MARK FRILET, *PRICE AND TERMS OF PAYMENT IN LARGE INTERNATIONAL TURNKEY CONTRACTS*, 18 *Int'l Bus. Law.* 362 (1990).
[38]HUGH CUMMINS, THE CONSTRUCTION CONTRACTS ACT 2013 - IMPLICATIONS FOR TURNKEY CONTRACTS AND ENERGY PERFORMANCE CONTRACTS, https://www.philiplee.ie/the-construction-contracts-act-2013-implications-for-turnkey-contracts-and-energy-performance-contracts/ (Visited on October 30, 2019)
[39]FRILET, *supra* note 33.

involving aspects of BOT and/or PFI. The stability and certainty that it brings to the employer in the form of single-point liability for design, supply and construction remain quite unparalleled. Further, it also allows a relatively inexperienced employer to entrust the technical aspects of a project to qualified professionals and this advantage assumes further significance if the project involves cutting-edge technology. Having said that, as has been discussed above, TCC model is not without its weaknesses, including risks associated with bidding expenses, cost overruns, under-designing etc. In a standard TCC, the risks assumed by the contractor is definitely the most of all the parties, which is why the contractors need to adopt an approach that has successfully married efficiency, commercial viability and technical prowess when it comes to managing, executing and controlling the project[40].Incidentally, studies have revealed that the involvement of the owner/employer in the execution of the project bears a direct correlation with the eventual success of the project.[41]This can of course be contractually provided for specifically, with the employer conducting regular audits of contractor's performance and the contractor complying with instructions arising from analysis of such audit reports and providing additional guarantees in case of deviation from such instructions.[42] Finally, one may also mention a particular method of managing the project that has witnessed success in the TCC model context; popularly referred to as the "open-book" approach, it requires the contractor to publish and disseminate its policies and execution procedures when it comes to various aspects of handling the project through all its phases such as planning, scheduling, design management, risk allocation and mitigation, responses to change in control, and managing various claims arising in course of the project –this in turn facilitates transparency and contributes to overall project efficiency, with the employer, the contractor and other people involved in the decision-making process putting in commensurate efforts in harmony, complementing each others' roles in the process and striving to turn the project into a successful one.

[40]For detailed discussion on the TCC Model in the Indian judicial context, one may refer to cases such as *Delhi Jal Board vs M/S Kaveri Infrastructure Pvt. Ltd.*, Delhi High Court, O.M.P. No.358/2007, November 29, 2013.
[41]THE SEARCH FOR THE PERFECT ARRANGEMENT: IS TURNKEY THE BEST, http://www.consilium404.com/pdfs/ContractArrangement.pdf ,(Last visited on October 20, 2019).
[42]*Ibid*.