



## Hedging the Procurement Risks of the EPC Projects

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### Abstract

Among several project delivery systems, Design-Build has been introduced as the most effective one. EPC (Engineering, Procurement and Construction) is a specific type of Design Build that the contractor is responsible for design, procurement and construction of the project, therefore must handle the risks that might arise in these fields. Futures and Forward contracts could be utilized in risk management considerations specially to hedge the procurement risk that EPC contractor will be faced with. This application has been investigated in this paper.

**Keywords:** EPC, Risk Management, Futures and Forward Contracts.

### 1. INTRODUCTION

The EPC contractor, accepts considerable amount of risk, thus unlike the Design-Bid-Build contractor, this contractor is a single respondent to the owner [1]. Rather than financial risks (of the project as a whole), all kinds of risk have been transferred to the EPC Contractor. In bidding process costs has been determined in details, so substantial obligations force the EPC Contractor to accomplish the project within predetermined costs. According to accepting this huge pack of risks, bidding price would increase. On account of transcending competitors in bidding environment, some types of these risks could be covered, resulting in less risky conditions which could decrease the bidding price and increase the chance of winning the bidding, consequently increase the profits acquired by the contractor.

In contrast to the privileged construction environment in Iran, in many countries; construction contractors (rather than design agents/contractors) are the base units in EPC covenants. It means that design services could be out-sourced and obtained from an external counsel. Design has been guaranteed to be constructible, because of consistency between design and construction restrictions. In comparison with Design-Bid-Build no more risks would emerge, therefore no more insurance, in addition to Design-Bid-Build designing insurances, is needed. Constructability considerations, ascertain that the construction phase would be accomplished with minimum amount of internal risks (risks that origins in internal environment of the project) and also at the minimum level of discrepancies which result in failure in operation. However there is still something that must be managed and it comes from connection of the contractor to the external environment; especially when the contractor is obliged to provide necessities of the project i.e. procurement has been added to designing and constructing. EPC contractor has determined the expenditures precisely, and also responsible for providing raw materials and that are needed in execution phase. Any unfavorable change in raw material prices threatens contractor's profits.