



The EPC Contract in Vietnam During the Global Integration

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The EPC contract (Engineering, Procurement, Construction) has become a common practice in the world for a long time and in Asia since the 1970s.

Construction work realized according to the EPC contract involves two parties: an investor who wants to buy the work; and an EPC contractor who makes engineering design, buys equipment and materials, constructs and sell the work to the investor. Their rights and duties in such contract are as follows:

a. Investor:

To obtain a factory work, the investor hires a design consultancy to make a document called Front-End Engineering Design (FEED) or Basic Design, and Commercial Terms and Conditions based on the internationally-accepted ITB (Instructions to Bidders). These documents help the investor select the most appropriate EPC contractor. When the work is under construction, the investor can

hire a supervisor who keeps a close watch on the construction until it is finished and delivered to the investor.

b. Contractor:

- Engineering:

The contractor makes the technical and detail designs based on the FEED and ITB. This is the most important task that ensure right technology and installed capacity for the work. After the technical design, the contractor prepares other designs (piping – and – instrument – design, mechanical design, electric and control design, steel structure design, and civil and building design, etc.). The task of making designs is carried out according to the optimized design with a view to reducing differences between designs, that is, reaching the minimum interface point. Designers also produce a main equipment list and a bill of materials to help with the procurement, and necessary documents needed for each stage of construction to help with the

construction.

- Procurement:

Equipment could be divided into two groups.

(1) Equipment that contractor has to place order for, or send contract to buy, and need a long time to obtain is the principle one. The contractor has to make exact calculations and place orders early in order to ensure progress of the work.

(2) This group includes materials that could be delivered at short notice and changed in quantity if need be. The contractor usually adds 5% to the amount required by bill of materials because there are possibly many changes in designs which can lead to the shortage of materials. After completion of the contract, the extra materials could be sold to the investor as spare parts needed for future maintenance.

The contractor has to work out processes of procuring the materials and supervising delivery and use of these materials.

- Construction: The contractor works out construction processes and submits them for approval by qualified bodies. He also has to form a quality control agency that will examine and accept the work after each stage of the construction of the project and inform the investor of the results.

- Trial run and training in operation:

The contractor has to carry out a trial run in order to prove the designed capacity of the work. The trial run process is worked out by a trial commission and a group of designers. After the trial run, the contractor can hand over the work to the investor. In addition, the contractor should give a training course in operating the work to technicians working for the investor.

Such an EPC contract provides various benefits for both parties.

An investor decides for an EPC

contract for several vital reasons. Some are:

- + The investor puts in minimum efforts for his project and, so, has less stress

- + EPC gives the investor one point contact. It is easy to monitor and coordinate

- + It is easy for the investor to get post-commissioning services

- + EPC way ensures quality and reduces practical issues faced in other ways

- + The investor is not affected by the market rise

- + Investment figure is known at the start of the project

A contractor prefers an EPC contract because of the following benefits:

- + The optimized designing process allows the contractor to save from 5% to 10% of the total cost

- + The EPC contract allows the contractor to carry out the work without waiting for completion of all designs and other documents, which helps him ensure the work duration and cut overheads

- + Responsibilities for all stages of the work construction are made clear, therefore disputes over this issue between designers and builders could be solved easily

- + As a procurer of materials, the contractor can build his own factory to make such materials

- + The contractor can make some profit based on favorable changes in market prices

In Vietnam, designers usually lack close relations with the building contractor. All designs are made by designers although the contractor could give useful opinion to these designs, or make some designs relating to building techniques. That is why the EPC contract has not become common in Vietnam for a long time.

Facing such a situation, the Government allowed the LILAMA

Corporation to realize some projects in the 2000s according to EPC contracts, such as Uông Bí Power Plant, Cà Mau 1 and Cà Mau 2 Power Plants, among others. Results of the projects under the EPC contract allow us to see problems with this way of doing business.

(1) The State had better allow certain companies to specialize in designing and develop into engineering design consultancies that strong enough to undertake the designing stage for major projects in key industries. Some mechanical construction companies and mechanical companies could be merged together in order to undertake the whole project according to the EPC contract. In future after accumulating enough experience and capital they could seek for EPC contracts with foreign investors.

(2) The EPC contract needs a legal infrastructure. The Law of Capital Construction should define clearly rights and duties of involved parties in order to deal with obstacles to the construction of projects undertaken by local corporations. They usually meet with difficulties in having designs and documents approved and securing capital and profit needed for completing the projects assigned by the State.

(3) The State had better adopt a policy to supply cheap capital to state-owned corporations to help them build factories making principal materials and equipment, and train armies of designers with a view to becoming strong enough to do their jobs according to international standard.

(4) Some state-owned corporations have been allowed to realize projects under EPC contracts while engineering designing companies weren't allowed to take part in the construction process. As a result, designing consultancies can only

design the construction process and receive no support and investment needed for making technical and detail designs based on the FEED. State-owned corporations had better develop their own designing departments and have personnel from these departments trained in foreign countries according to international standards. This effort can help determine their comparative advantages and improve performance for corporations.

(5) The said corporations should invest in building factories producing principal equipment and materials needed for EPC projects they undertake. Major international contractors as Siemens, Mitsubishi and Alstom have had their own factories to make such equipment as generators and turbines and only buy subsidiary equipment from other suppliers.

(6) Corporations must recruit or train project managers who have expertise in each stage of the work – Engineering, Procurement and Construction.

(7) Corporations must work out a mechanism for delegating rights and duties, including in financial matters, to their departments in order to help them carry out the EPC projects effectively according to international practices.

In solving these problems, the implementation of EPC projects can help save a volume of foreign exchange needed for hiring foreign contractors, and support development of local engineering industry. Profit made by EPC contractors could be a source of investment for corporations in their efforts to develop their own armies of experts and facilities.

In addition, this could be seen as a chance for local corporations to do business according to international practices and improve their international competitiveness when Vietnam got accession to the WTO ■