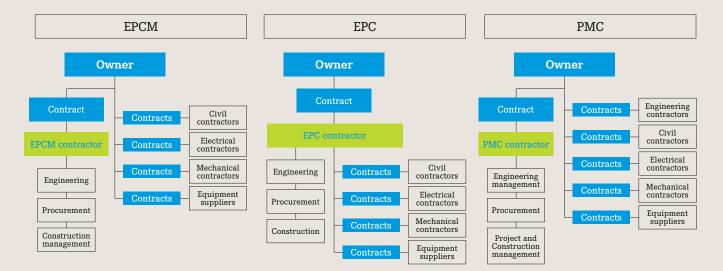


Choosing the project strategy: EPC, EPCM, PMC

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The right choice of a project strategy is key to the success of your investment. There are three main variations of possible contract strategies: EPC, EPCM, PMC. How to choose the one that suits your needs?



Each project is unique, so there is no universal rule for choosing the best approach. To select reliably among available options, you need a wide experience or trusted partner with a decent knowledge about your organization and targets. 5 basic questions may guide you and help correctly evaluate your needs in relationships with contractors.

- 1. What are your expectations in timing and budget?
- 2. How well described is your project before the start and who is the owner of the technology know-how?
- 3. How much control would you like to have over the project?
- 4. Do you have a professional, experienced and available team in-house to coordinate the work?
- 5. Guarantee obligations: are you capable to manage claims on your own?

EPCM: Engineering, Procurement and Construction management

The most flexible approach to project execution in terms of timing and budget. First, you can receive the proposal from a service provider 2-4 months faster than in case of an EPC request. Moreover, the costs will probably be less, as there is no need for the supplier to add money to the budget for risk mitigation. Last, but not least, before the contract(s) for construction works is signed, the client has very limited financial risks in case of project cancelation.

As the project is done step by step, it lets the client implement design changes at any stage and/or refine the strategy during project execution. This approach also allows attracting professional companies in different fields – design and construction.

However, in this case the responsibility is shared between the designer and the contractor. Coordination of those parties requires a qualified team of the client to control contractors and deliver technical decisions rightly and in

Pay attention:

- Importance of one team approach. In case of EPCM it is extremely important to choose a supplier, who will take your side and stand for your interests. At Bilfinger Tebodin we call it 'owner's engineering'. The teams from both sides should communicate effectively and work as one.
- Contractual conditions and split of responsibilities between the EPCM company and contractors to avoid delays and/or extra costs.

time. Do you have those people available in-house?

Keep in mind that in case of insufficient specification of requirements from your side, there is a possibility of deviation from expected parameters in terms of quality and timing. Nevertheless, you will get the benefits of:

- effective budget and quality management,
- high quality of design and construction,
- effective change management,
- opportunity to be involved in project execution at any stage.



Pavel Celunda, Process Engineering Director:

"Key factor is who holds the process technology knowledge. If you as a client own it, EPCM will most probably fit your project the best. If you expect technology solutions from the contactor (e.g. power stations), EPC company may develop them, fit the proper equipment and provide process guarantees."

EPC: Engineering, Procurement and Construction

If you wish to have only one point of contact and limit your involvement in the project, probably EPC is an option for you. It means consolidated liability in case of warranty cases, effective communication and a minimum number of interfaces. However, be ready to wait for an offer for at least 2-4 months, as the contractor has to monitor the market to fix the price. Project cost could turn out to be 20-30% higher in comparison with EPCM project approach, as there is a large number of assumptions (project is not described in detail yet) and provisions for contracting, and the contactor wants to cover the possible risks.

After contract signing with fixed scope of work and price list for equipment, the contactor gets a monopoly position and the further project execution is fully in his hands. It means your CAPEX is fixed from the starting point. From one hand, it lets you limit your involvement in the process, but from the other hand, each change

Pay attention to the reputation and previous experience of the supplier.

It is better to have well-established relationships in terms of previous projects, as basically you rely on the partner and fully delegate your project realization to him.

required by you may cause additional expenses. Therefore, all technical requirements should be defined as much as possible at the initial stage and fixed in the EPC contract, including the guarantee parameters, test procedures and required standards. In case it's not possible, exceeding budget and deadlines is very likely.

PMC+C: Project Management Consultancy + Contractor(s)

Consider PMC approach if you want to split the responsibility for engineering and project management function between two contractors. It may be required when engineering required very specific process capabilities and you cannot find

EPC contractor managed by PMC company - why not?

If you prefer to fix the costs, but still need a professional external management, you can easily combine those two approaches.

enough bidders with good combination of engineering and project management skills on the market. In this case PMC partner can act as client's representative during the design phase (performing design coordination and evaluation) as well as the construction phase (being responsible for construction management on site).

This model can be also applicable for projects with multi-contracting approach, when PMC partner performs nominal function of the general contractor coordinating activities of subcontractors per discipline (civil, mechanical, electrical etc.) You get the freedom to implement any changes at any stage of your project, which will be managed by the PMC service provider. Nevertheless the impact of any change on the time and budget may be significant.



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