

## A COMINDIS Feature: Top 10 Project risks in Plant Engineering and Infrastructure Projects

### Top 6: Lack of experiences and resources (technical and staffing)<sup>1</sup>

- Top 1      Unclear scope of works.
- Top 2      Miscalculation and cost overrun.
- Top 3      Design problems & defective works.
- Top 4      Extension of time & delay LD's / liability, costs of prolongation and inefficiencies due to disturbances and variations.
- Top 5      Deficiencies in commercial implementation of (EPC) contracts (weak contract management, lack of notifications, and lack of collecting evidence).
- Top 6      Lack of experiences and resources (technical and staffing).**
- Top 7      Contractual ambiguities (gaps, different interpretation of clauses, new clauses).
- Top 8      Difficulties in enforcing claims (absence of a neutral court, long and costly proceedings).
- Top 9      Relying on co-operation with weak third parties (e.g., planner, sub-contractor, or consortium partner).
- Top10     Compliance, unknown markets, customers & contractors.

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<sup>1</sup> Please be aware that this publication shall not be taken as a legal advice. Any project requires intensive legal review and negotiations with the contractual partner.

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Lack of experiences and resources belong to the most important risks in (EPC/turnkey) plant engineering projects. In plant construction projects such deficiencies happen often due to several reasons.

*What are reasons for lack of experiences?*

A lack of experience in the implementation of a plant engineering project might be due to the specific character of the project as very complex or even first of its kind. Technical complexity, special technical requirements and availability guarantees play an important role. Often permits add an additional complexity (e.g. for water treatment, fire protection, HAZOP analysis<sup>2</sup>, noise or emission reduction). Furthermore, the specifics might be caused not only by the complexity of the project as such, but by its special location, i.e. external factors (e.g. "brownfield" projects which are embedded in existing plant structures, or geological difficulties). So even if the contractor has already collected experience in such type of projects it is not sure that under the specific circumstances the experience is sufficient. This is one of the reasons why customers in complex projects often require a pre-qualification for the tender to ensure that the successful bidder has indeed the necessary technical knowledge and experience.

*What are the reasons for a lack of resources?*

A lack of resources often happens unexpectedly after the contract has been concluded, due to internal or external developments. The shortage of skilled workers and the age pyramid play a major role here. Another reason for a "lack of resources issue" might be decisions taken by a shareholder within the organization of a contractor or even the customer. A contractor or customer that undergoes a restructuring process connected with a staff reduction program might be in serious trouble to steer and implement a complex project. In addition to the pure lack of resources the motivation of employees might go down, and cause an additional negative effect. Often complex EPC contracts require the approval of the customer to substitute key personal. On the side of the Customer the EPC contract often requires certain releases of drawings, technical descriptions, or Factory Acceptance Tests (FAT). The customer must have the necessary capacities and technical qualification to conduct the engineering review process timely and with the necessary diligence.

Issues connected with lack of experiences and resources lead in many cases to technical issues, delay and LD's. If the Customer can't release drawings or specifications in time, the contractor might claim for a disruption.

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<sup>2</sup> HAZOP Analysis stands for Hazard and Operability analysis.

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*What can the Parties do to avoid such deficiencies?*

In terms of the lack of experience issue, it is recommended to conduct an honest and comprehensive due diligence about its own references. The Contractor should answer the following questions:

- Do I really have the technical experience for this type of a project?
- Are the technical references of the company still actual (or too old to be taken into consideration, because the experienced staff has retired or left the company)?
- Do I have the technical skills related to the specifics of this project (location, brownfield etc.)?
- Do I know the requirements by local Law (e.g. coming from permits, HAZOP etc.)?

The Customer should answer the following questions:

- Do I have organized a robust pre-qualification process for the tender?
- Is my pre-qualification process correctly drafted and covers the appropriate references (in terms of number, specifics and time)?
- Do I have the necessary staff to steer the project from an owners perspective or it is preferable to appoint an owners engineer or to implement an EPCM structure?

Related to the lack of resources, the contractor should answer the following questions:

- Is the currently available staff sufficient in terms of number and qualification to implement the project?
- Does the staff and especially the project manager have the necessary education and personal experiences (check the CV's!)?
- Are all the necessary functions covered in a complex project (e.g. project manager, engineering, purchasing, contract & claims Management, erection, blue collars, commissioning etc.)?
- In case of a restructuring, has the impact of a staff reduction program on an ongoing project been considered?

*Key Takeaways*

- The technical and commercial success of a complex (EPC) project correlates with technical experience and availability of necessary resources.
- Losses are avoidable if the Customer requires a pre-qualification in the tender and the Contractor reviews its own specific references diligently.
- The Parties to a complex (EPC) project should thoroughly evaluate their own technical experience and availabilities of qualified staff to implement the project successfully.

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COMINDIS is a specialized Boutique Law firm in plant engineering, insurance and compliance. If you need legal support in your project, please approach us.

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