

# Case Study: LNG Liquefaction Facility

*Expert analysis and opinions related to claimed financial damages due to schedule delays*





# Dispute

The project involved the greenfield construction of a \$10 billion LNG liquefaction facility. Project ownership, consisting of several venture partners, hired a joint venture EPC partnership to engineer and construct the facility over a planned 50-month duration. The EPC JV experienced challenges merging its separate design scopes, had some difficulties with the arrival of bulk material to fabrication facilities, was impacted by adverse weather, and significantly overestimated the productivity it could achieve in construction. The project was delayed from ~50 to ~70 months, and the original budget of \$10 billion had nearly doubled by the time the project finished.

The EPC JV claimed approximately \$600 million for the delay and associated costs. The owner engaged Interface to evaluate the validity of the EPC JV's claims; specifically, the owner asked Interface to assess the impacts of delays in approvals and the design change made just after the execution versus other issues arising from the EPC JV's performance. Interface evaluated whether the changes noted by the EPC JV accounted for the cost increases and schedule delay or whether other contributing, concurrent problems impacted the project outcomes.

## PROJECT

Greenfield LNG Liquefaction Facility

\$10B+ Total Project Cost

## PRIMARY ISSUES

Change Management

Schedule Delays

Cost Overruns

An aerial photograph of an industrial facility, possibly a refinery or chemical plant, situated on a riverbank. The facility includes several large storage tanks, a complex network of pipes and structures, and a tall distillation column. A large blue and red ship is docked at a long pier extending from the facility into the river. The surrounding area is lush with green trees, and a winding river is visible in the background under a clear blue sky.

# Approach

Working with the owner's counsel, Interface began by separating alleged EPC claim damages that were more likely the EPC JV's responsibility from those claim damages the owner was likely responsible for. Interface then analyzed the contract, the estimate, the basis of estimate, the schedule, the basis of schedule, and the history of invoices and correspondence between the parties. Weekly reports, monthly reports, and minutes from the Executive Sponsor meetings provided an overall narrative frame for the analysis.

Interface found that the schedule was not mechanically sound enough to use for delay analysis and failed to meet the industry best practice standards for CPM scheduling required in the contract. Furthermore, Interface found math and currency conversion errors in the estimate, and the estimate in the claim did not correctly differentiate between time-independent and time-dependent costs.

The EPC JV provided a time impact analysis of the schedule and impacts to demonstrate and substantiate others' responsibility for critical delay and to support its claim. Interface analyzed the logic and sequence of the EPC JV's baseline schedule. The analysis found critical logic flaws that corrupted the baseline critical path, calculated float values, and dates. These flaws undermined the EPC JV's ability to correctly and accurately demonstrate delay using the baseline schedule.



# Outcome

Interface's expert successfully argued that critical flaws in the schedule had to be corrected for the schedule to be reliable for assessing delays. The corrected schedule was loaded with time-dependent costs, where changes to the critical path, float, and claim value could be accurately assessed. The corrected schedule and to-go estimate values yielded new critical and near-critical paths. When the impacts claimed by the EPC JV were considered within the context of the corrected schedule, the tribunal found that the impacts did not delay the project to the degree the EPC JV maintained.

Interface's demonstrations that the schedule did not meet best practices and had mechanical flaws, and that the time-dependent costs of the impacts were lower than claimed, led to the initial \$600 million claim being settled for \$200 million, resulting in \$400 million in savings to the owner.

