

Case study

Mexican open bid rounds 1.1 and 1.2

Project details

Start date 2015

End date 2015

Location Mexico

Overview

ADIL supported the client and its partners in preparation for the Shallow Water Block licencing rounds Call 1.1 and 1.2 in Mexico. These were the first international bidding rounds for blocks in Mexican waters.

The work was used to value the blocks and present to our client a confident case for bidding for the blocks and presentation to the board and investors.

ADIL used its own in house experience and expertise in conjunction with our accelerated conceptual engineering (ACE) methodology and a software modelling tool from Siemens called Oil and Gas Manager (OGM) to produce technically sound concepts and deterministic estimates for the blocks that the client had high graded from those on offer.

ADIL refined these to derive workable full life facilities solutions and then derive equipment lists, weight estimates and installation methodologies which were used to produce cost estimates.

The facilities definition and cost estimates which were delivered as part

of the process are engineering-based. This meant that our client moved through the decision making process with fewer unknowns and decisions outstanding, less engineering costs and increased confidence in comparison to traditional assumption based cost estimates.

The client was successful in winning the two very first blocks awarded in the first license round.

In total over 30 concepts for a variety of blocks were developed and various sensitivities run on those, including a review of area development prospects and onshore options such as power generation and ERD.

ADIL approach

- Established suitable assumptions for the developments, including: field layout, well temperature and pressure, fluid composition, water production, export battery limits and new infrastructure requirements
- Used ACE to generate development concepts for three reserves cases per block, incorporating facilities, platform, water injection and gas lift, manifolds, flowlines, infrastructure, export pipeline and the like; the OGM models were used to define a technically feasible concept for the development, as well as establish capital cost and Opex estimates
- Developed a high level schedule for the development, including cost estimates for activities that will be undertaken prior to the project being sanctioned



>>>

- Provided assurance of the technical model from facilities, process and subsea engineering perspectives
- Ran a number of sensitivities relating to aspects of the development including power generation philosophy; modularisation and fabrication location; module size limits; distance from final point of delivery, subsea tie-back for fixed facilities, fixed facilities vs FPSO
- Reviewed Capex estimates with the client and compared with estimates obtained from Mexican and US GOM yards, benchmarked against known outturn costs and the output assured

Deliverables

- How ADIL added value:
 - Producing and costing up concepts efficiently allowed the client to run various sensitivities against each concept for each potential license block under the bid, allowing an early understanding of upside and risk
 - The experience of our personnel and transparency of the ACE process allowed our client to gain the confidence of the investors
 - Benchmarking cost data to current Mexico prices levels (this also proved our cost data base and assumptions to be in line with market conditions)
 - The ACE process allowed efficient review of cost and economics of alternative concepts for certain developments, such as a review of offshore platforms versus subsea tie-backs, offshore versus onshore processing and reception facilities and deeper water fixed structures versus an FPSO concept

- The output from the ACE process, such as equipment weight and dimensions, electrical load requirements and topside weight and number of decks allowed review of the concept against locally available construction facilities and marine equipment capability
- Integrating the requirements of the various disciplines such as subsurface, wells, facilities and subsea to derive the most efficient concepts
- Applying commercial and technical innovation / experience gained globally on concepts for the Mexican GOM

- The study outputs allowed the client to compare the development costs for a range of potential reserves and development options, and in turn evaluate the field potential, enabling a decision on whether to proceed with a licence bid application
- The output of the modelling was a range of Capex and Opex estimates associated with the various reserves estimates and throughput production rates
- Each estimate was supported by an OGM model assured by ADIL staff
- The development schedules were prepared, including drilling, and reviewed
- Schedules were used to phase the Capex, Opex and Abex costs
- A full report prepared which included all assumptions and output, including the basic technical details such as jacket weights, topside weights, equipment footprints, electrical load requirement, pipelines sizing, etc

- The use of ACE tools enabled the development of over 30 concepts each with sensitivities runs to be completed within three months
- The exercise was documented from start to finish in a final report, and summarised in a presentation that was given to the client's board
- The client was successful in winning the two very first blocks awarded in the first license round