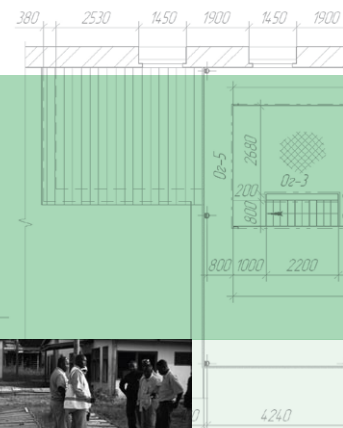


PREFEASIBILITY STUDIES



What you get in a Simulus PFS

We have found that a prefeasibility study means different things to different people. The differences generally come down to the level of supporting information for the capital estimate. This in turn is often related to the client's understanding of their flowsheet and perception of risk. Consequently, Simulus has developed two levels of prefeasibility studies (PFS 1 and PFS2) to meet these differing requirements. PFS 2 provides more information and utilises less factoring than PFS 1.

Our goal is to significantly reduce the use of factoring in the capital estimation process. Factoring allows engineers to hide the lack of thought they have given to your project. Providing full equipment sizing, quantities and installation hours requires engineering attention and scrutiny across the project, not just in the flowsheet development.

The deliverables for our PFS1 level study include a capital estimate supported by the following:

- Process design criteria
- Process flow diagrams
- Mass and energy balance

- Residues and effluents list
- Plant 3D model including
 - General arrangement and elevations
 - Main mechanical equipment
 - Electrical substations
 - Main pipe racks and bunds
 - Buildings and roads based upon a flat site
- Capital cost supported by
 - Sized mechanical equipment list
 - Sized electrical load list
 - Installation hours by item
 - Civil quantities
 - Structural quantities
 - Factored piping, cabling and instrumentation
 - Site buildings and infrastructure (calculated from required plant inputs and the manning schedule)
 - Equipment costs for the top 80% of equipment by value are generated from vendor quotes, with remainder of costs generated from our database of costs provided by international vendors. All costs are maintained to be less than six months old.
- Operating cost
- Economic evaluation and sensitivity analysis
- Project report and development recommendations
- The confidence to proceed with your project in the right direction

The deliverables for our PFS2 study adds to the PFS1 as described above, with increased allowances for the following:

- Test work reviews
- Flowsheet development and options analysis
- Design criteria for all disciplines
- Inclusion of full civil and structural quantities and installation hours
- Valve and instrument counts generated from standard P&ID installations and associated installation hours
- 3D model detail is improved by the addition of structural steel, main pipe runs and further detail in the utilities and infrastructure areas

The engineering deliverables for both PFS1 and PFS2 are rapidly produced for each process or flowsheet option and throughput scenario that you wish to investigate, not only the base case. Using this methodology Simulus can prepare a revised capital estimate with full deliverables list as described above in hours - not days or weeks as has traditionally been the case.

TWICE THE ENGINEERS

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