Effective capital investment planning is essential for corporations operating in the highly competitive process industries. By combining its engineering knowledge and expertise with the industry’s leading estimating tool, ABB offers a low cost, robust, front end engineering service which helps its clients get investment decisions right first time.

Establishing up front the cost of a new process plant or a major revamp of an existing plant can be an expensive business. Current, conventional thinking is based on the preparation of a comprehensive Front End Engineering and Design (FEED) comprising a wide range of engineering deliverables from which a ‘bottom-up’ approach estimate is generated.

Although tried and tested, there are inherent difficulties with this methodology. Firstly, it is expensive and given a project may ultimately not achieve sanction, the expenditure in coming to a decision can be unproductive. Secondly, the current approach is inflexible in that it is difficult to either modify the configuration of the plant or its footprint part way through the process, simply because of the engineering rework entailed.

ABB takes a different approach. Our philosophy is that the estimate should drive the engineering deliverables, thereby keeping them to a minimum. Through a deep understanding of the project delivery process, we can develop accurate estimates from conceptual process definitions plus key plant layout data. In this way cost is minimised and maximum flexibility retained.

**What we offer**

ABB combines its expertise and knowledge of front end engineering with Aspen Capital Cost Estimator, the industry’s leading estimating tool, to prepare accurate, high value estimates for green field developments or major brownfield revamps. Capital Cost Estimator is built on Aspen Icarus™ technology and is designed specifically for use in the process industries. It follows a unique approach where equipment and associated plant bulks are represented by comprehensive, design-based installation models.

Through the deployment of Capital Cost Estimator on previous projects, ABB has identified those engineering deliverables which significantly impact on the cost estimate and the operational performance.
Typically these are:

- Heat and mass balance
- Process flow diagram
- Material selection diagram
- Design pressure and temperature diagram
- Equipment data sheets
- Utilities schedule
- Equipment list
- Plot plan and elevations
- Outline building specifications

ABB’s process development and optioneering experience is used to rapidly develop and screen potential front end options. The options are then evaluated and estimated, allowing the optimum solution to be selected to take forward. The development work focuses only on the key areas that most impact the total project’s cost and final performance. Further development work is completed only once the project progresses to the next stage, avoiding wasted effort.

We can also provide estimates where ABB has not done the process development, for example, if the initial design has been done by a client’s process team. In this case we would work closely with the development team to make sure that the key inputs to the models are developed to allow for an accurate estimate build up without any unnecessary work. In either case the output will be a robust estimate on which to base the decision to proceed with the project or not.

Benefits

ABB’s approach offers process industry operating companies a number of benefits including:

- The ability to make quick yet robust investment decisions at an affordable cost
- Maximising the value of the initial development work by providing the flexibility to readily adjust the configuration or location of process plant
- Minimising unproductive development effort and costs
- Confidence in having selected the optimum project option to proceed with

Why ABB?

ABB offers an alternative approach to front end development and cost estimating. Our methodology was developed to minimise up front development costs and maximise the value of the project knowledge developed by retaining the flexibility for efficient optioneering.

We combine our considerable practical engineering knowledge and expertise with the industry’s leading estimating tool.

ABB’s operational heritage means that we understand the key elements that need to be concentrated on in the key early stages of a project to ensure that the right project is defined to meet the client’s objectives. We bring both a designer and operator perspective to the project development.