

ZEPPELIN VALUE ENGINEERING
System for success



Polymer Plants

ENGINEERING YOUR SUCCESS



Zeppelin Systems, the world leading plant manufacturer for high quality bulk material and liquids handling, has remarkably grown over the past 60 years. We cover the demands of a wide range of industries and supply all plant manufacturing services from one single source, whether basic engineering, in-house production of components, final assembly or comprehensive customer service. Thanks to our financial strength and our global network we have long been a reliable partner for our customers.

Every Zeppelin plant is developed according to the clients' specific requirements and realized thanks to our customized innovative processes and technologies.

The knowledge we have acquired over more than 60 years of plant manufacturing and the world's largest network for bulk material handling are the key to providing ideal solutions whatever the challenge. After all, your success is our goal.

Zeppelin plant engineering – business fields

Polymer Plants

Plants for plastics producers and forwarders

Plastics Processing & Rubber Plants

Plants for the plastics processing and rubber industry

Reimelt Food Technology

Plants for the food, confectionery and bakery industry

Henschel Mixing Technology

Mixers, mixing systems

Silos & Filters

Silo technology and filters

Components

Diverter valves, rotary feeders, separators, sifters ...

Customer Service

Assembly, maintenance, spare parts

Quality Service

Services in quality management

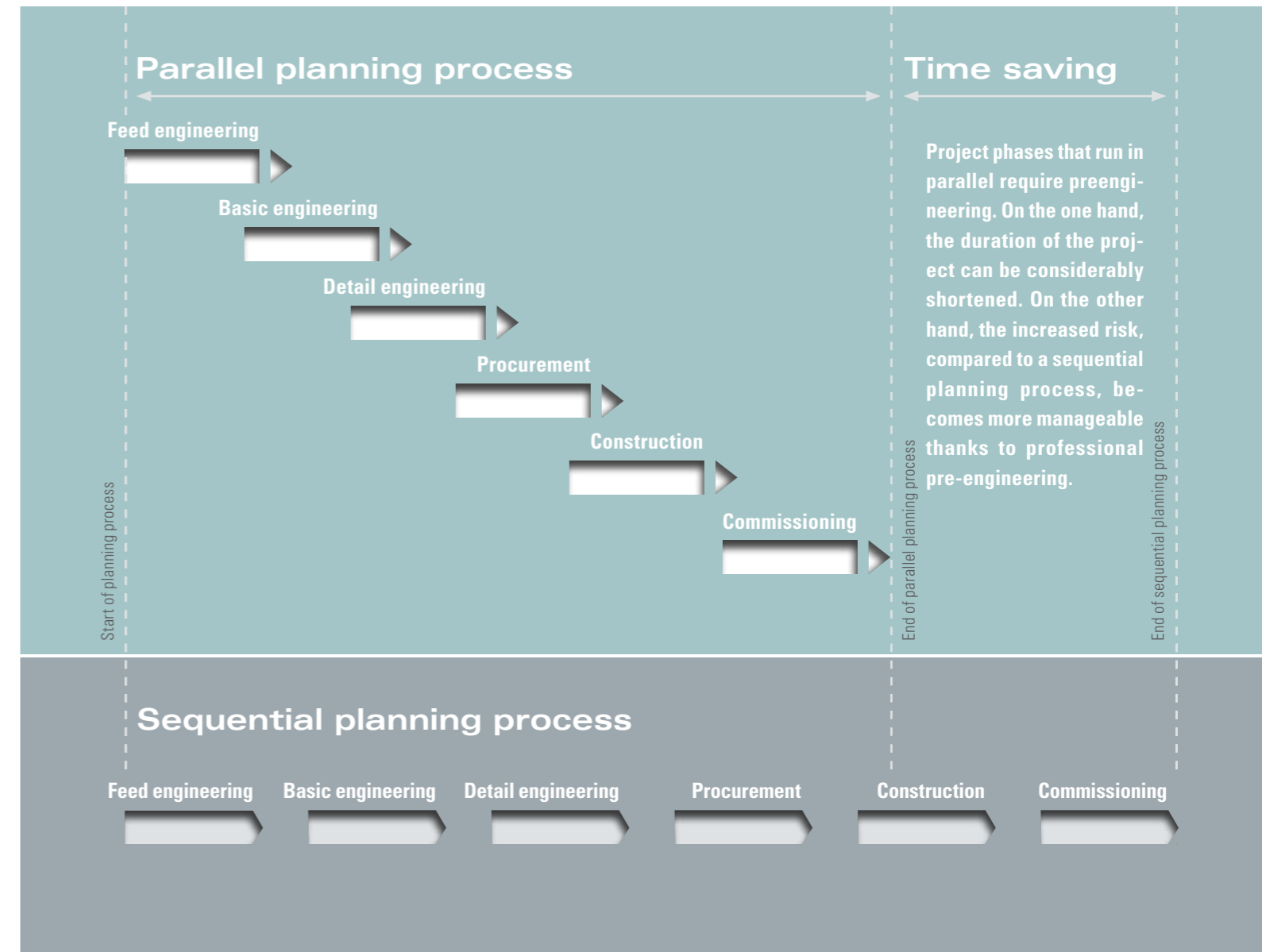
FASTER – SMARTER – BETTER

Zeppelin Value Engineering

More value for more success – this is what we strive for. Our engineering departments all over the world apply all their experience and knowledge in the optimization of planning processes. The result: an innovative concept that not only saves time, but also reduces costs. We call it value engineering. For you, this means market edge, whether for new plants or plant expansion.



Phase model of a project



FRONT-END LOADING (FEL)

Zeppelin Value Engineering's goal is to save time and money by planning processes optimally. We start the process at a point in time when project costs can still be influenced: at the initiation phase.

FEL can be gradually implemented in the design process and ends with the BASIC engineering or the request for bids of the project. Zeppelin provides the necessary know-how for all FEL phases as well as the appropriate engineering services that will optimize your project at any given time.



The planning phases:

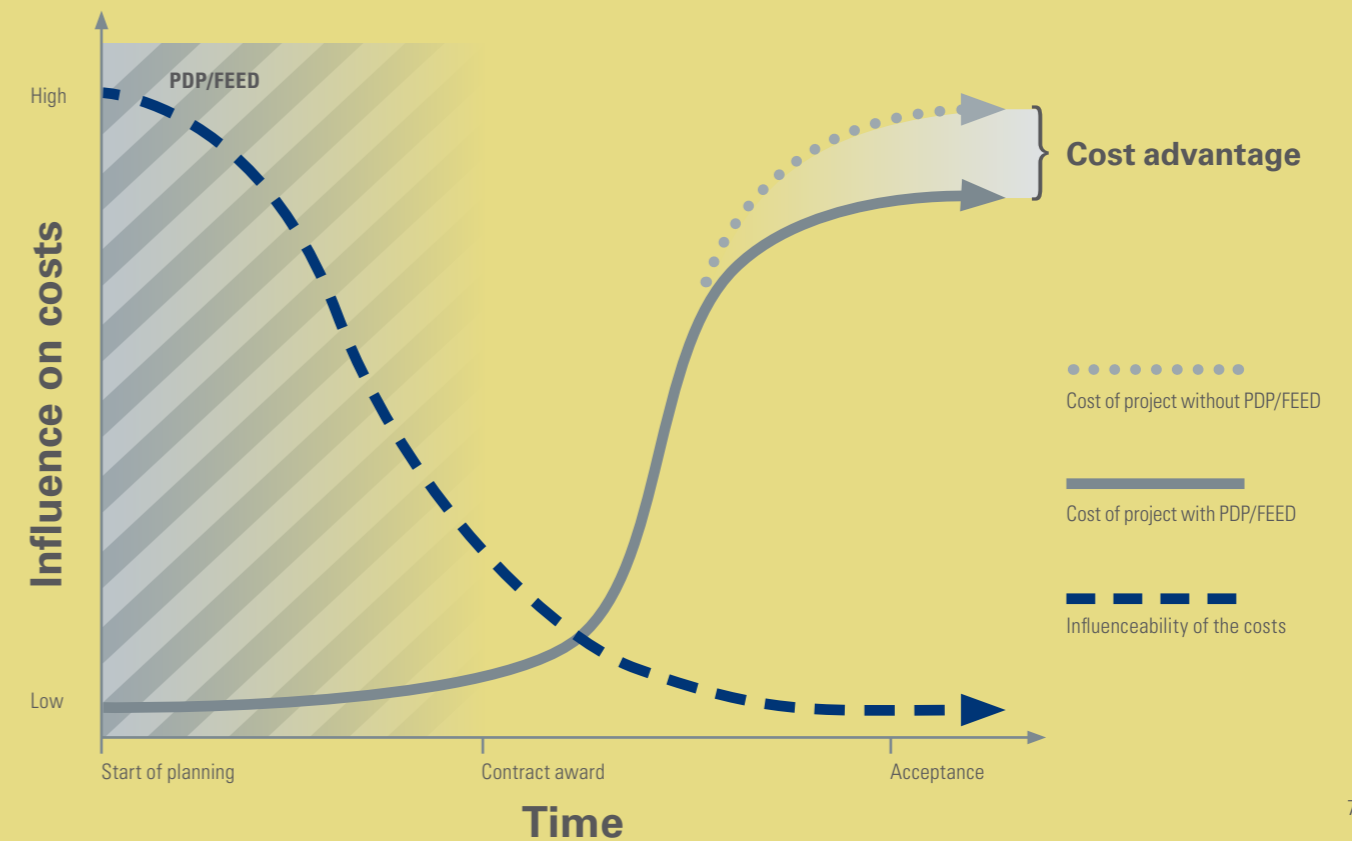
- FEL 1 – Project Design Package (PDP)
- FEL 2 – Front-End Engineering Design (FEED)
- FEL 3 – Basic Engineering (BASIC)



Project costs can be significantly influenced in the initial phase, but only very little once the project is in execution.

Duration of the project

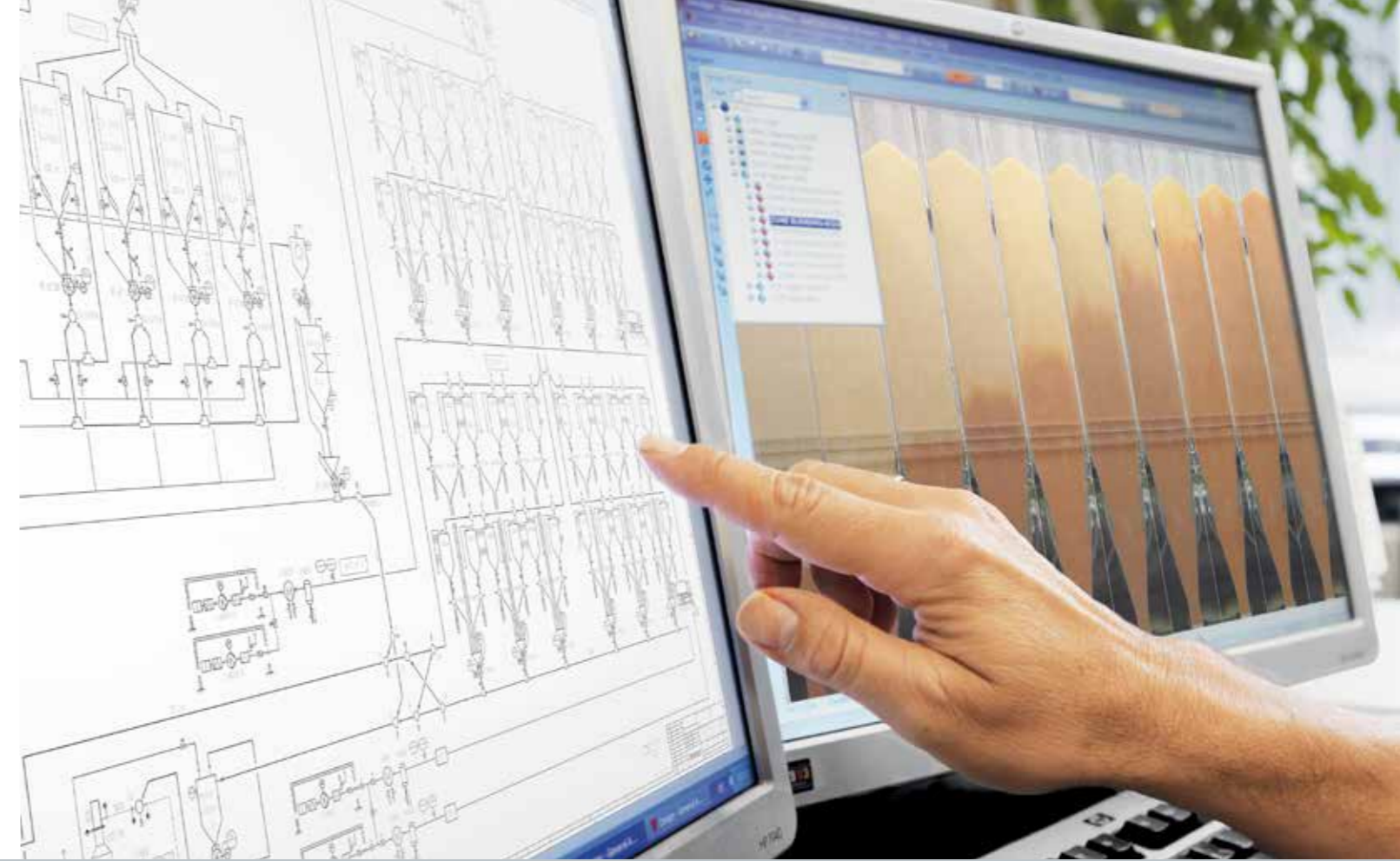
Planning and design phase



FEL 1 – Project Design Package (PDP)

Simulations and calculations are the basis for a realistic estimation of the anticipated costs. Step 1 of an FEL consists in determining the main components and providing a first assessment of the thermal and material balances.

The result is a PFD with the main components process data as well as a cost estimate of all the components.



We carry out the preliminary simulation of pneumatic conveying systems, of a degassing process for monomer containing polymers, of the storage and blending process up to the logistics facility of polymers.

FEL 2 – Front-End Engineering Design (FEED)

In step 2 of the FEL phase, focus is set on the technical realization of the plant. The main components (silos, blenders, blower stations, bagging units, warehouses and pipelines) are integrated into an overall layout plan. We create the necessary PFDs, determine the energy required and support you in the dimensioning and specification of the main components.



- PFD
- Dimensioning of the main components
- Specification of the main components
- Energy required
- Overall layout plan
- Budget proposal
- Timetable



FEL 3 – Basic Engineering (BASIC)

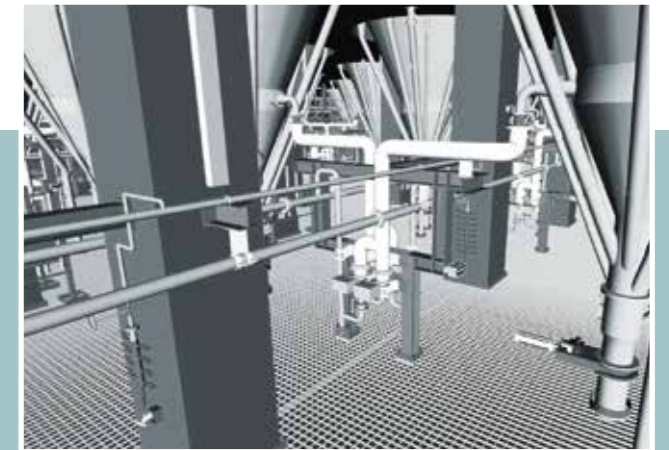
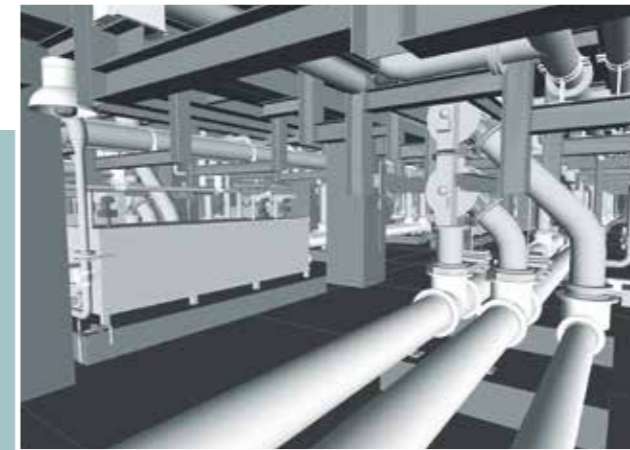
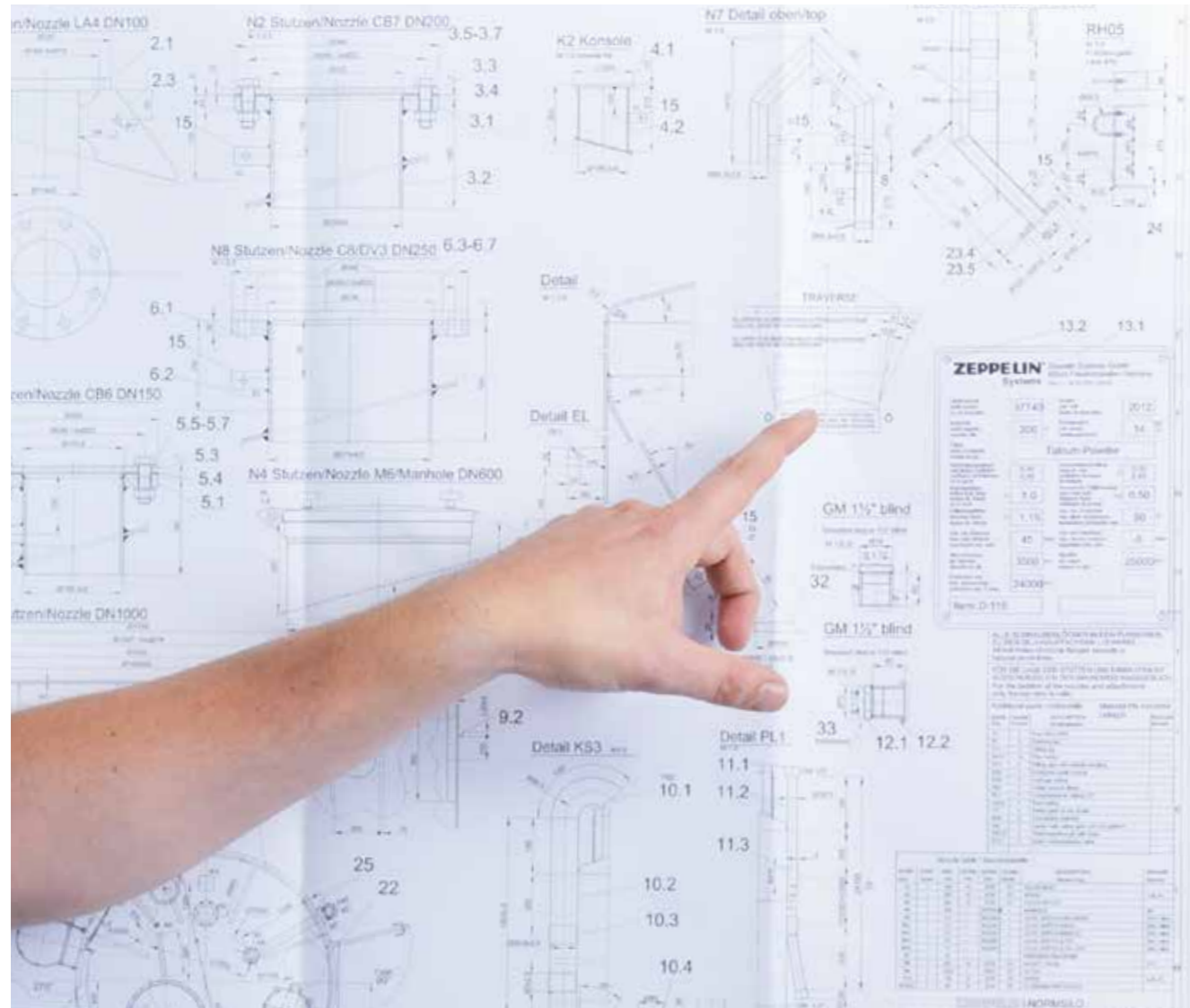
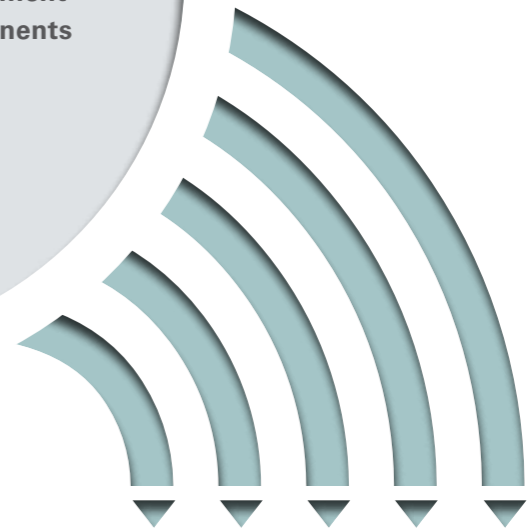
The more accurately costs, volumes, deadlines, time and efforts can be determined, the more efficiently a project can advance. Zeppelin will also support you in every matter related to step 3 of FEL.

In this phase, which represents the completion of the Front-End Loading, inaccuracies are reduced. Quantity structure, deadlines, number of hours required and costs are determined in a much better way.

P&IDs for the project as well as other relevant documents for the realization of the plant result from FEL 3.



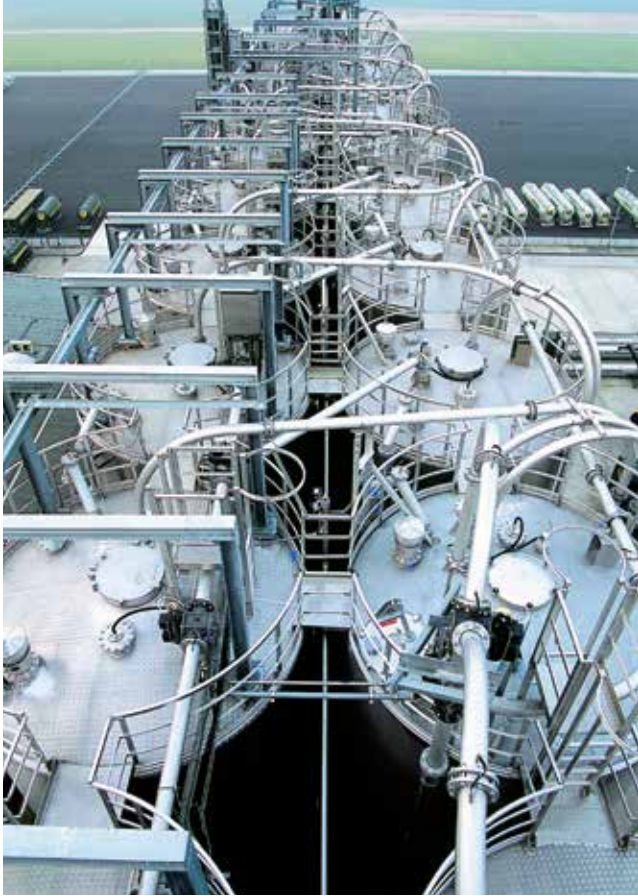
- E/I&C design
- Civil engineering
- Specification of instruments
- P&ID
- Final compilation and arrangement of the plants and main components
- Bill of material
- Timetable
- Budget





FROM A TO ZEPPELIN Technological leadership included

As the world leading manufacturer for high quality bulk material handling, we can naturally also support you in all other steps of the project. Product testing, uprating studies, design of degassing tanks and process vessels, expansion and extension of existing logistics or dedusting plants, risk management analysis for bulk material plants, handling of new polymer grades, etc.: we have a wide scope of services and our professional project management is renown all over the world.



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