

Turnkey Feasibility Study: Base Chemicals from Renewables



Executive Summary

Customer

Globally operating science-based company active in health, nutrition and materials.

Challenge

Develop and select the most profitable process route — first time right.

Solution

State of the art methodology and tools for integral process development and evaluation.

Benefits & Results

- Understanding and insights of the chosen technologies
- Full economic analysis and evaluation
- Selected the most profitable process route & technology

Our Client is a globally operating science-based company active in health, nutrition and materials. Through innovative solutions, the company improves performance in global markets such as food and dietary supplements, personal care, food, pharmaceuticals, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. With over 20,000 employees the company delivers net sales of more than €8 billion.

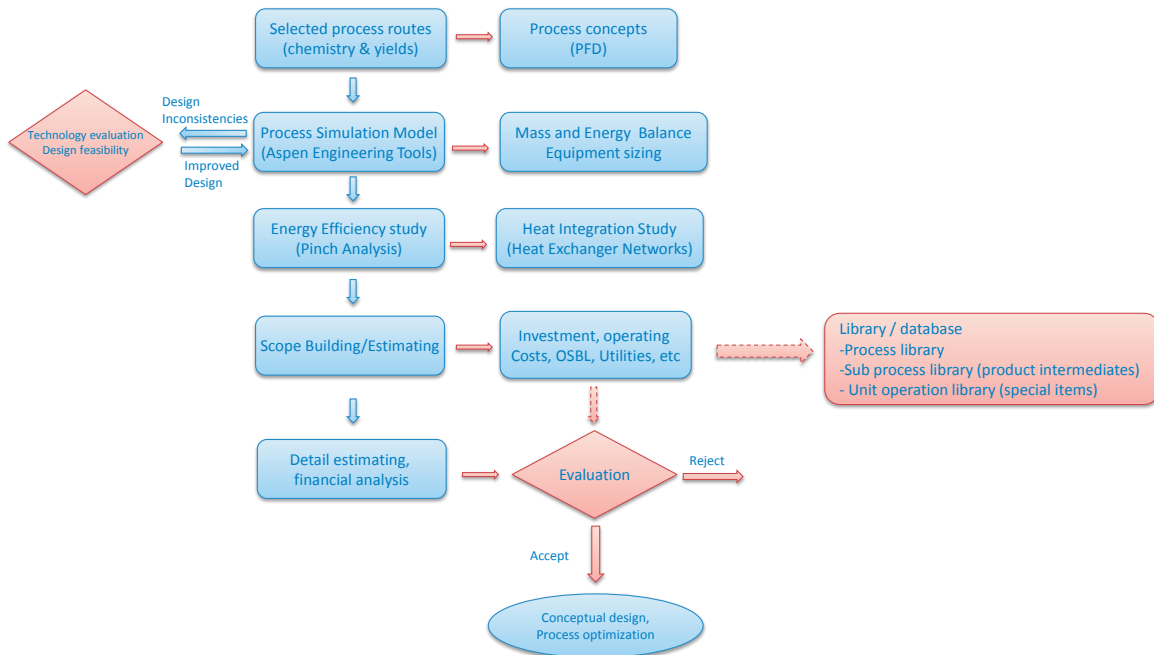
Challenge

Our customer is developing a new technology for the production of base chemicals from the renewable feedstock material. Through their international partner, the company has the opportunity to implement this innovative technology at various industrial sites worldwide.

In 2011 the company's research department developed a number of process alternatives, each leading to the desired product and a variety of valuable side products. This broad range of opportunities sets a challenge for the company to choose the most profitable process option.

As the project is in the early research phase, not much information is known or available for the suggested process alternatives. It is crucial to find the right balance between the resources invested to complete the techno-economic study of the various process alternatives versus the quality of the study. In other words: the results of the study must be sufficiently reliable for decision making AND this must be achieved within a reasonable time and budget.

Maturus Optimi proposed a **structured approach** to conduct a comprehensive techno-economic evaluation study that is within the given budget and time frame.



In close cooperation with the company's research experts, Maturus Optimi derives the initial process schemes for each alternative proposed. Using specialized process simulation software tools, fast and reliable technology evaluation is performed for all the process options.

Inconsistencies are corrected and infeasible process designs are identified at a very early stage. The obtained simulation models are used to further improve the energy efficiency, resulting in up to 60% of energy reduction in some of the designs. Equipment sizing and preliminary process layouts are derived and used for calculating the investment costs.

By summarizing and comparing all the information produced by this study, the company was able to select the most profitable process design first time right.

" The challenge for the consultant is to look for the right information at the right place, without getting into too much details. Time, costs and quality tradeoff has to be balanced in such way that it adds value to the customer; experience is key to find that balance."

Results

A commercially successful product is the ultimate target for our client. Maturus Optimi has provided the client with reliable results within a very short time frame in a very early project stage. This gave the client an advantage over their competition in terms of development but also time to market!

The customer was particularly satisfied by being actively involved in every stage of the project and by the transparency of the approach proposed by Maturus Optimi. The ultimate goal to choose and develop the most profitable process design has been reached.

Moreover, the customer considers a great value is added to their project through:

- developing process schemes
- better understanding and insight into the chosen technology
- process simulation models that will be used for other design studies
- information about the feedstock and the utility requirements
- information about products, side products and eventual waste streams
- full economic analysis including greenfield investment and operation costs

“Deployment of sophisticated tools, up-to-date with the latest technology and the market information, proves to be essential for the successful execution, speed and accuracy of the results.”

Maturus Optimi Consulting & Services

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