



# Pulp & Biorefinery

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Our thermal process solutions  
guarantee maximum energy efficiency!

[www.gigkarasek.com](http://www.gigkarasek.com)



## Recovery of liquids, chemicals and solvents

GIG Karasek focuses on process solutions and plants based on thermal separation technology for the concentration of residual streams, side streams, and recovery of solvents and valuable materials of all kinds in the pulp industry biorefineries. GIG Karasek specializes in developing customized processes, including the design, manufacture, installation, and optimization of plants. The portfolio ranges from compact skid plants to turnkey solutions, evidenced by numerous worldwide references.

## The technology

Thermal separation technologies (evaporation, distillation, etc.) separate or concentrate liquid mixtures (solutions, suspensions, emulsions) due to their different boiling points. Therefore, in addition to wastewater minimization with subsequent thermal or commercial utilization of the end products, the production of intermediate and end products can also be the task of these plants. This leads to increased profitability of the overall process and the optimization of company key figures such as optimized energy costs and sustainable environmental protection, which is already required by laws and standards.

## Our products and services

- ◆ Feasibility studies and energy optimization
- ◆ Pilot tests ◆ Miniplants and pilot plants
- ◆ Evaporation Technologies
  - ◆ Multi-stage plants
  - ◆ Mechanical vapor recompression
  - ◆ Heating surface extensions or lamella replacement
- ◆ Thin film and short path technologies, high viscosity evaporator
- ◆ Revamping, Debottlenecking und Retrofitting

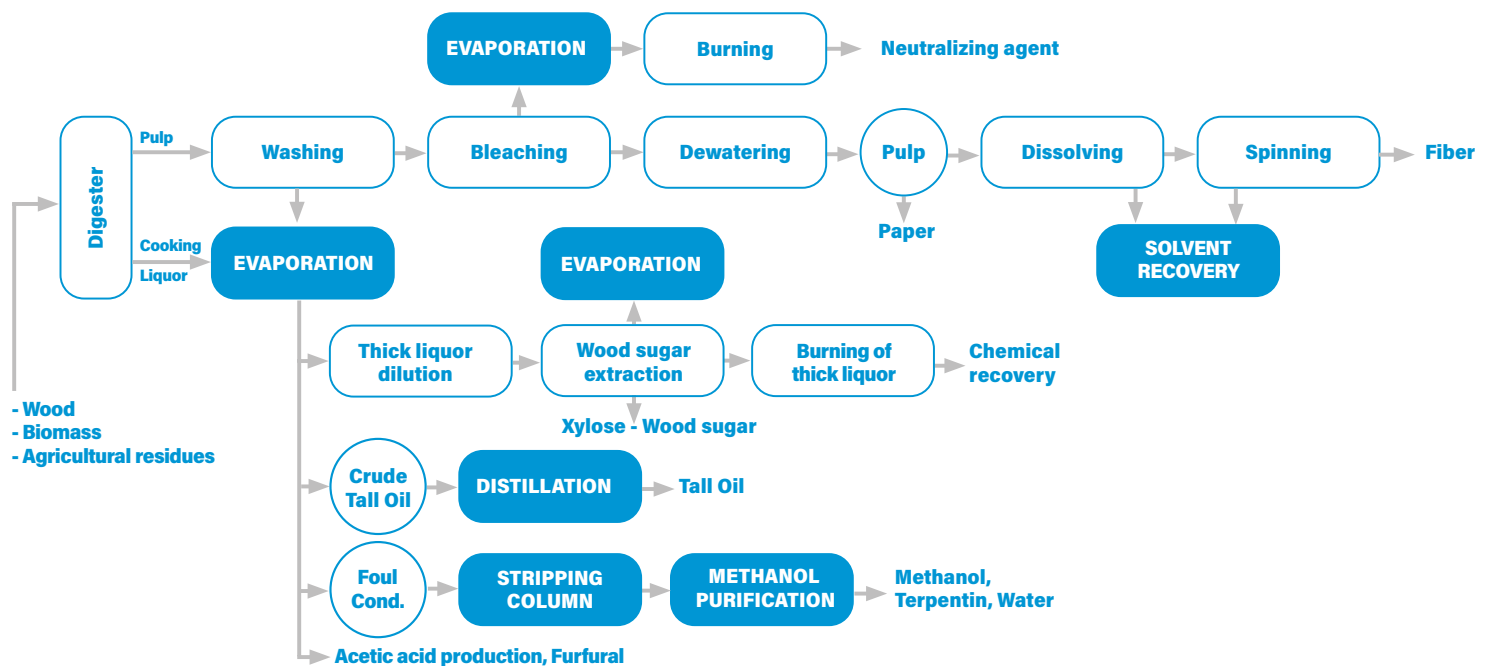
## Typical applications

- ◆ Concentration of waste liquors (black liquor, sulfite liquor)
- ◆ Condensate Purification & Methanol Distillation
- ◆ District heat extraction from evaporation plants
- ◆ Concentration of bleach plant wastewater, lignosulfonates and xylose
- ◆ Distillation of tall oil and biodiesel
- ◆ Solvent recovery from wet fiber processes
- ◆ Ionic liquid recovery





## Possible applications of evaporation and distillation plants



## Your benefits with GIG Karasek

- ◆ Many years of engineering expertise
- ◆ Scale-up via internal pilot plant trials
- ◆ Optimum price-performance ratio
- ◆ Individual process solutions
- ◆ Efficient project completion
- ◆ High manufacturing quality
- ◆ Guaranteed spare parts service

## Increase the sustainability of your production processes

The European Green Deal is the European Union's overarching objective to become the first climate-neutral continent by 2050. The EU aims to reduce greenhouse gas emissions by 55 % by 2030 compared to 1990 levels. European companies shall become world leaders in clean products and technologies. Besides these ambitious goals, actual global crises and escalating fossil fuel prices threaten the process industry. Those facts will radically transform not only the pulp and biorefinery industry but also relevant production processes.

GIG Karasek helps you to identify and exploit **sustainability and savings potential** in your processes!





We create individualized process solutions and plants ◆ efficiently ◆ competently ◆ cooperatively ◆ proactively ◆ in a targeted way ◆ reliably and according to your requirements.

Regardless of the scope of services, our goal is to optimize your production facilities with customized solutions in terms of product quality and processes.

Our evaporation plants guarantee high evaporation rates for liquid mixtures with moderate viscosities. High competence and all-round personal service make GIG Karasek your reliable partner for special challenges.



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