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GKT drives industrial efficiency – through optimized thermal processes, targeted waste heat utilization, and economically viable CO_2 valorization.

WE ENGINEER GREEN KEY TECHNOLOGIES.

For nearly 90 years, we have been building equipment and plants that prove themselves in industrial operation – robust, precise, and reliable under continuous load. This industrial foundation forms the basis of our process engineering expertise.

Building on this, we deliver integrated process solutions across a wide range of industries where efficiency and competitiveness are inseparably linked.

In our in-house technical center, we test and optimize processes under real operating conditions before systematically scaling them to industrial level – up to turnkey EPC plants. As a system partner, we combine engineering, manufacturing, and service into fully integrated solutions from a single source.

The result is clearly measurable: economical processes, reduced energy consumption, and lower CO_2 emissions – implemented worldwide and consistently designed for long-term industrial impact.

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Thermal Separation

Delivery of a thin-film evaporator skid unit

MVR system for a pulp mill

GKT technical center in Gloggnitz, Austria

For decades, GKT has been a highly specialized partner for thermal separation technology in industries where energy efficiency and plant availability are critical. We develop systems that efficiently separate process streams, minimize losses, and optimize operating costs.

Our technologies combine precise separation performance with efficient use of industrial utilities. This improves the overall energy balance in both greenfield and brownfield plants while ensuring high availability in continuous operation with low maintenance requirements.

Our portfolio includes plate and tube falling-film evaporators as well as thin-film and short-path technology – designed for maximum product quality, minimal losses, and stable processes even under demanding conditions.

Explore further insights

OUR TECHNOLOGY EXPERTISE

Conventional Evaporation – Falling-film Technology

- **Multi-effect evaporation systems**
  For high evaporation capacity with maximum energy efficiency
- **Mechanical and thermal vapor recompression (MVR und TVR)**
  Reduced fresh steam and cooling water demand as well as lower CO_2 emissions through electrified processes
- **Plate falling-film evaporators with lamella technology**
  High evaporation rates for low-viscosity and heavily fouling media
  Spot- and laser-welded plate heating elements in all standard formats
- **Tube falling-film evaporators**
  Efficient operation even at small capacities for low-viscosity and moderately fouling media

Thin-film and Short-path Technology

- **Thin-film evaporators**
  High-performance concentration and separation of demanding media
- **Thin-film dryers**
  Gentle indirect drying with high throughput – ideal for sludges and solid media
- **Short-path evaporators**
  Gentle distillation and separation of temperature-sensitive media – down to fine vacuum

Our Scope of Supply

Single equipment, modular skid units, and turnkey plants – delivered from pilot scale to full industrial capacity.

OUR TECHNOLOGY IMPACT

- **CO_2 as a value stream**
  Conversion of captured CO_2 into marketable industrial products such as syngas, methanol, formic acid, SAF, or ethylene

- **Zero-emission potential**
  Process based on water and renewable electricity – without fossil energy sources

- **No external H_2 supply**
  Reduces complexity, infrastructure requirements, and operating costs while increasing operational reliability

- **Mild process conditions**
  Operation close to ambient temperature and pressure – robust, safe, and easy to integrate

- **Modular and scalable**
  Scaling through modular units for different process requirements and locations

Our Scope of Supply

From consulting and development to piloting, industrial scale-up, and turnkey plant delivery

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CO_2 Valorization

As a near-industrial test and research system, the ECO2CELL Cube enables the validation of applications in carbon capture and utilization (CCU) and Power-to-X.

ECO2CELL Cube: Pilot plant in two 20-foot containers featuring the patented CO_2 electrolyzer.

Reducing CO_2 emissions is a key requirement for sustainable industrial processes. With ECO2CELL, GKT provides a powerful solution for utilizing CO_2 captured in industrial environments.

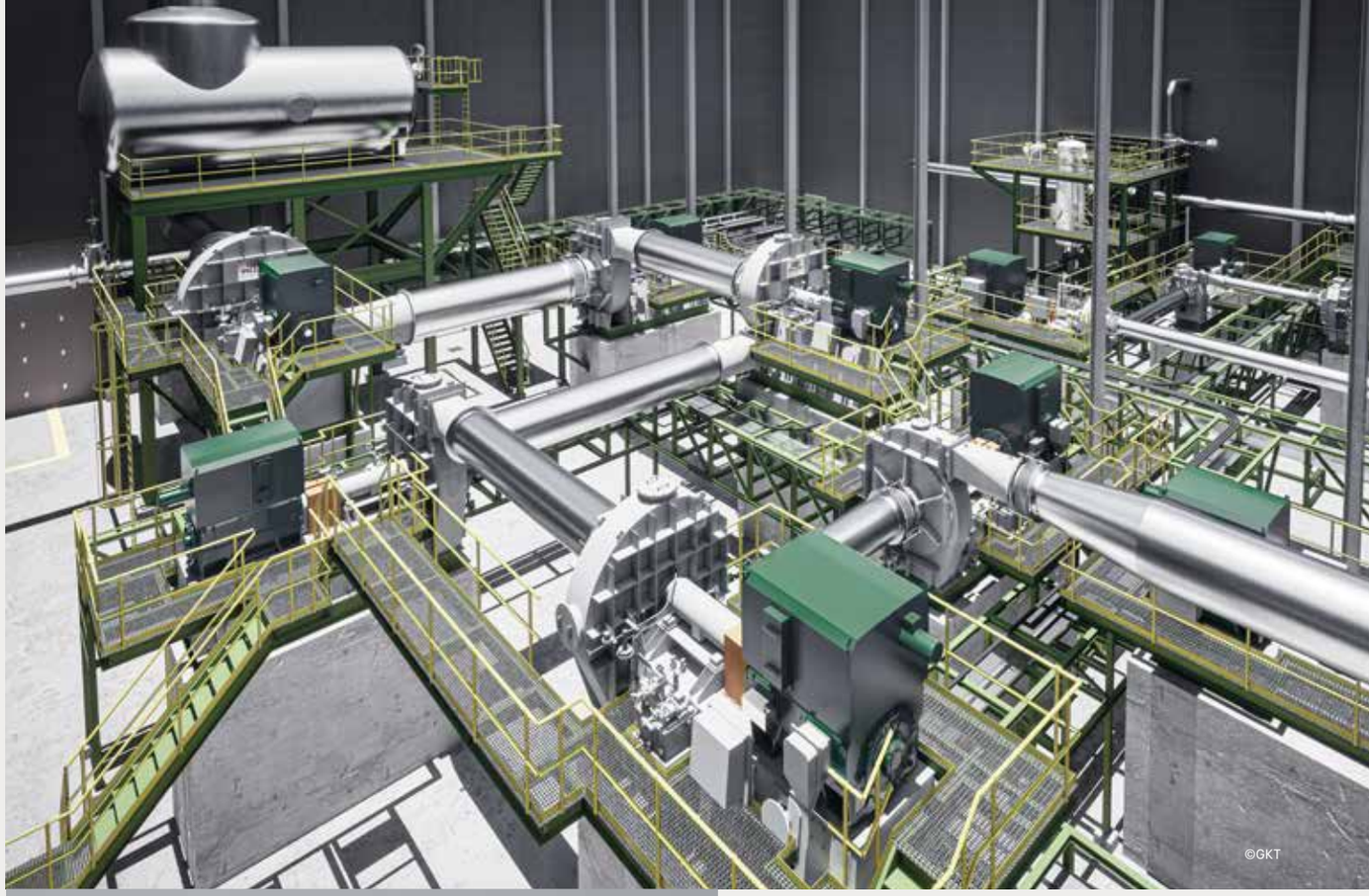
ECO2CELL

The patented ECO2CELL electrolyzer converts CO_2 into chemical building blocks and fuels using water and electricity from renewable sources – under mild process conditions and without the need for external hydrogen.

This turns emissions into value – and decarbonization into a technologically effective contribution to environmental and site responsibility.

Explore further insights

Waste Heat Utilization



Visualization of the CompriVAP heat pump solution at the BASF site in Ludwigshafen

Visualization of a VarioVAP multi-source system

Waste heat occurs in nearly every industrial process. A significant share remains unused – even though it represents one of the largest efficiency potentials in energy-intensive production systems.

With the goal of a zero-waste-heat future, GKT leverages its VarioVAP and CompriVAP solutions to capture these previously unused energy streams and systematically integrate them into existing process environments.

Waste heat is no longer treated as a by-product, but as a strategic energy source within an optimized overall system.

The result is substantial energy savings – with a direct impact on CO_2 balance and economic performance.

Explore further insights

OUR TECHNOLOGY IMPACT

- **Waste heat as a strategic energy source**
  Systematic utilization of previously unused waste heat streams to reduce reliance on fossil energy
- **CompriVAP – proven MVR technology**
  Utilizes large waste heat streams, generates green process steam, and replaces fresh steam – reducing primary energy demand, emissions, and operating costs
- **VarioVAP – multi-source system**
  Integrates multiple waste heat sources – even with different media and low energy content
- **Lower primary energy use and CO_2 emissions**
  Significant reduction in energy demand, costs, and emissions
- **Flexible application – internal and external**
  Applicable in single plants or industrial parks, with reintegration into processes or external energy networks

Our Scope of Supply

From potential analysis and system design to turnkey implementation

Services

As a system partner, we support our customers throughout the entire lifecycle of their plants – from initial process analysis, engineering and delivery to commissioning and long-term operation.

Based on our process engineering expertise, we provide validation in our in-house technical center, solid engineering, and structured project execution up to full industrial scale. During operation, maintenance, spare parts, process analysis, and modernization projects ensure long-term system performance.

This keeps plants efficient, reliable, and economically viable – even as requirements, media, or production conditions change. Long-term support and direct access to our experts are key elements of our system partner approach.

Modernization of a plate falling-film evaporator – bundle replacement

Explore further insights

Technical Center

Innovation is proven in industrial operation. That is why we develop and validate processes in our in-house technical center in Gloggnitz under near-real operating conditions.

Here, we conduct laboratory and pilot trials, analyze processes, and determine optimal operating parameters. Our comprehensive infrastructure enables testing across a wide range of media and technologies – from feasibility studies to pilot scale. The resulting data forms the basis for reliable design and scaling of industrial plants.

In addition, two mobile units are available: the MINIPLANT for flexible trials in thermal separation technology and the ECO2CELL Cube, a containerized pilot system for CO_2 valorization.

This enables near-industrial testing directly on site, shorter development cycles, and validation of new processes up to the production of initial product quantities at pilot scale.

Explore further insights

Technical center for laboratory and pilot trials in Gloggnitz, Austria

Mobile short-path evaporator MINIPLANT

Manufacturing of a short-path evaporator at the production site in Attnang-Puchheim

Manufacturing

Our industrial foundation starts with in-house manufacturing. We produce key components and specialized equipment at two production sites in Austria – Gloggnitz, with a focus on falling-film evaporators and lamella manufacturing, and Attnang-Puchheim for components used in thin-film and short-path technology.

Both sites are equipped with state-of-the-art production facilities, certified to international manufacturing standards, and every component undergoes comprehensive testing before deployment.

This ensures controlled quality made in Europe, short coordination paths, and reliable execution – forming the basis for plants that perform in continuous industrial operation and provide long-term investment security.

Explore further insights

HSEQ – Health, Safety, Environment & Quality

Reliability requires clear standards. That is why we integrate health, safety, environmental protection, and quality into a unified HSEQ management system.

Structured processes, preventive measures, and continuous improvement ensure stable operations – from engineering and manufacturing to commissioning. In doing so, we take responsibility for our employees, our customers, and the environment.

Our management system is certified in accordance with ISO 9001, ISO 14001, and ISO 45001. It ensures high standards in quality and safety, as well as reliable project execution – even under demanding industrial conditions.

Explore further insights

Digitalization and IIoT

Digital technologies open up new opportunities to operate industrial processes with greater transparency, efficiency, and stability. That is why we systematically integrate Industrial Internet of Things (IIoT) into our plants and process solutions.

Through continuous data acquisition and analysis, plant conditions become visible, process parameters can be optimized, and potential deviations are identified at an early stage. Efficiency potentials can be systematically unlocked, downtime reduced, and maintenance activities precisely planned.

This increases plant availability, stabilizes processes, and provides a solid foundation for data-driven decision-making in ongoing operations.

Explore further insights

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Locations

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Find your dedicated contact within our global partner network

WE ENGINEER GREEN KEY TECHNOLOGIES

GKT is a globally operating system partner for thermal separation and environmental technologies – with nearly 90 years of expertise.

As part of the Dr. Aichhorn Group, we combine entrepreneurial stability with continuous technological development. We turn process efficiency into measurable impact and translate sustainable industrial processes into effective solutions.

Our approach:
We Engineer Green Key Technologies.

From thermal separation processes to CO_2 valorization, waste heat recovery, and IIoT-enabled process optimization, we deliver scalable process solutions – validated in our in-house technical center and implemented up to turnkey EPC plants.

The result: economical processes, reduced energy consumption, and lower CO_2 emissions – proven worldwide through successfully executed projects.

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