



# PÖRNER WATER

Water is an increasingly scarce resource and thus of crucial importance for many production sites. Both the water supply with the appropriate quantity and quality and the proper disposal of process wastewater are essential requirements. State-of-the-art systems and compliance with environmental standards while operating plants with high-energy efficiency are necessary to be economically successful. For any challenges associated with new installations, extensions or modernizations of plants, Pörner Water offers integrated solutions – from the idea to its realization.

## WATER - THE RESOURCE

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The competence center Pörner Water offers complete solutions for water treatment plants in every project phase for many sectors of industry:

- Oil / gas fields (on shore/ off shore)
- Refineries
- Petrochemical industry
- Pharmaceutical industry
- Chemical industry

In this context, we focus on clean water, environmental health and safety of personnel and the environment as well as improved energy and cost efficiency.

## PÖRNER WATER

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Pörner Water offers engineering services for a wide variety of chemical-physical and biological processes in the following areas:

- Surface water treatment
- Well rehabilitation
- Condensate treatment
- Cooling water treatment
- Produced water treatment
- Wastewater treatment



Supply and commissioning of a combined produced water treatment plant with a capacity of 41.6 m<sup>3</sup>/h and surface water treatment plant with a capacity of 33 m<sup>3</sup>/h with subsequent re-injection into the reservoir (Tazlau / Romania, executed on behalf of Siemens)

Backed by comprehensive project references for international installations, and close cooperation with innovative technology partners, Pörner Water provides the optimum combination of modern water processes, systems and special components to meet customers' needs.

Pörner's mission is to execute projects completely and responsibly: from the basic concept - tailored to customer requirements - to complete engineering, procurement and site supervision up to commissioning, training and start-up - as well as advanced service options available for predictive maintenance.

# PÖRNER WATER

## COMPREHENSIVE COMPETENCE

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Whether developing an integrated water treatment concept for a refinery, wastewater treatment of a pharmaceutical plant or condensate treatment in oil production, Pörner Water has the experience and the expertise to create a customized solution.

With our competence center Pörner Water, we support our customers in the process industry even better to im-

plement energy-efficient solutions as well as sustainably minimizing emissions from process plants.

Dedicated to continuous development, we test new technologies and accompany pilot studies on site to demonstrate the technical and economic feasibility of our solutions in close cooperation with our customers.

## LIFE-CYCLE-SERVICE

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Beyond front-end engineering and EPC services Pörner Water offers predictive maintenance services for the completed plants in operation.

Based on experience obtained from design, engineering and commissioning of process units, the Pörner Water specialists are best qualified to provide evaluation, concepts and services for long-term value creation and full functionality of the plants at low maintenance and utility

costs. The aim of Life Cycle Service is to ensure security of supply, increase energy efficiency and maintain the plant over the long term.

Critical risk elements are consistently reduced – such as unplanned downtimes, damage to key plant equipment and negative environmental impacts – to ensure a continuous and safe operation of the plant at all times.

### Main elements of maintenance:

- Ensure full availability of water treatment unit
- Optimize utilization of process chemicals while maintaining the appropriate water quality
- Training for operators to identify potential risks and avoid process failures

### Benefits for the customer:

- Optimized operation of the water treatment unit and auxiliary equipment
- Process optimization (increased plant availability at minimized utility consumption)
- Know-how transfer to plant operators

## TOTAL COST OF OWNERSHIP

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Early engagement of Pörner Water in the conceptual project phase results in lower total cost of ownership and greater value throughout the operational plant life.

Experienced in operation consultancy, process evaluation and optimization of water treatment technologies, the Pörner experts develop specific process solutions in complex projects.

# PÖRNER WATER TECHNOLOGIES

Pörner Water has a wide range of experience with different treatment technologies and can therefore provide objective and system-independent advice.

## Process Water Treatment

- Flocculation, coagulation, sedimentation, flotation
- Media filtration (sand, activated carbon and mixed bed filters)
- Removal of iron and manganese
- Removal of hydrocarbons, BTXE, phenols
- Membrane processes (ultra-filtration, micro-filtration, nano-filtration, reverse osmosis)
- Ion exchangers with internal/external regeneration
- CEDI (Continuous Electro Deionization)
- Integrated solutions of all listed technologies

## Process Wastewater Treatment

- Primary oil removal (API, CPI)
- Secondary oil removal (flotation)
- Media filtration (sand, activated carbon and mixed bed filters)
- Physical/chemical/biological wastewater treatment
- Membrane processes (MBR, ultra-filtration, micro-filtration)
- Integrated solutions of all listed technologies

OIL



OIL PRODUCTION



TANK FARM



REFINERY / PETROCHEMISTRY

UPSTREAM

MIDSTREAM

DOWNSTREAM

GAS



GAS EXPLORATION



GAS TERMINAL



GAS DISTRIBUTION

Water treatment along the complete oil and gas value chain

# REFERENCES

## Produced Water Treatment

- Customer: NCOC (North Caspian Operating Company)
- Location: Atyrau / Kazakhstan
- Scope of work: basic & detail engineering, procurement, manufacturing, site supervision, commissioning
- Commissioning: 2016 (extension stage 1),  
2022 (extension stage 2)



Supply of a produced water treatment plant for subsequent re-injection into the reservoir with a capacity of 164 m<sup>3</sup>/h (extension stage 1) and 82 m<sup>3</sup>/h (extension stage 2).

Execution on behalf of Siemens

## River Water Treatment

- Customer: OMV Petrom SA
- Location: Tazlau / Romania
- Scope of work: basic & detail engineering, procurement, manufacturing & installation, commissioning
- Commissioning: 2016



Supply of a river water treatment plant consisting of coagulation, flocculation, sedimentation and degassing with a capacity of 33 m<sup>3</sup>/h (5 000 BWP) for subsequent re-injection into the reservoir.

Execution on behalf of Siemens

## Process Water Treatment

- Customer: Infraserb Höchst
- Location: Industriepark Höchst / Germany
- Scope of work: basic & detail engineering, manufacturing, installation, commissioning
- Commissioning: 2013



Treatment of river water to boiler feed water by ultra-filtration, cation exchanger for decarbonisation, reverse osmosis, degassers and subsequent multistep ion exchangers with a flow rate of 300 m<sup>3</sup>/h (stage 1) and 100 m<sup>3</sup>/h (stage 2).

Execution on behalf of Siemens

## Boiler Feed Water Treatment

- Customer: OMV Deutschland GmbH
- Location: Burghausen / Germany
- Scope of work: basic & detail engineering, construction, installation supervision, commissioning
- Commissioning: 2007



Boiler feed water treatment with cation exchanger, degassers, anionic exchanger and subsequent mixed bed filter with a flow rate of 180 m<sup>3</sup>/h for the ion exchanger and 360 m<sup>3</sup>/h for the mixed bed filter stage.

Execution on behalf of Siemens

### PÖRNER INGENIEURGESELLSCHAFT MBH

Hamburgerstrasse 9 | 1050 Vienna | Austria  
Phone: +43 5 05899-0 | Fax: +43 5 05899-99  
Email: [vienna@poerner.at](mailto:vienna@poerner.at)  
[www.poerner.at](http://www.poerner.at)

