

ENGLISH 2015





WE CREATE PROCESS PLANTS

The Pörner Group, a technology-oriented engineering company plans, designs, manages and supervises the construction of plants for the process industry - from the idea all the way to the finished product in the required quantity with the required quality.

The decisive extra in innovation, commitment and reliability results from the expertise gained from over 2,000 executed projects – these range from minor modifications to large scale investments of more than EUR 100 mil. The team of 500 engineers and specialists guarantees the expeditious and efficient execution and professional project implementation.

The Pörner Group follows with "Anlagenbau 4.0" the modern approach not only to consider the information processing but also by taking a holistic view of ALL disciplines and components of the system "process plant" with a resultant engineering layout that ensures the highest possible operational efficiency for today and for the future.

It takes a lot of know-how to provide highly automated process plants with the world's best and most innovative technical components and systems, to utilize raw materials and resources optimally by minimized energy consumption and ensuring good environmental compatibility. The Pörner Group as a well-positioned company can fulfil these tasks from a single source.

In the field of bitumen technology the company is market leader with the Biturox® process at international level and has developed the Pörner Bitumen Packing System for a cost-effective transport of bitumen in cold condition.

Our mission is to increase productivity and sustainability through the use of the latest technology – for new plants as well as for reconstructions. This enables our clients to achieve the best competitiveness in their industry sector.

Andreas Pörner and Peter Schlossnikel

Managing Partners of Pörner Group



DI Andreas Pörner



Cluber 4

DI Peter Schlossnikel

ANLAGENBAU 4.0

We build plants with the decisive extra in innovation, flexibility and productivity.

THE PÖRNER GROUP



The Pörner Group is trusted all over the world

The group designs, constructs and delivers industrial process plants including turn-key projects worldwide for the refinery, petrochemical and chemical, gas, power generation, environmental and pharmaceutical industries and industrial production.

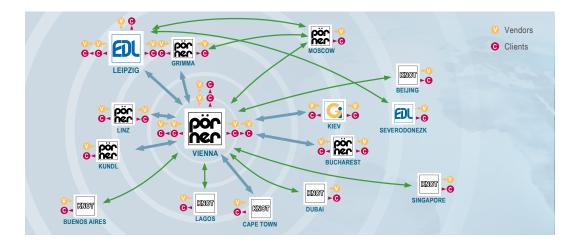
The company offers the full range of engineering services to design, expand or modernise process plants for the industry.

A NETWORK OF ENGINEERING COMPETENCE

The Pörner Group, based in Vienna (Austria), is present in nine locations worldwide. Companies and offices operating under the banner of the Pörner Group are located in Austria (Linz, Kundl), Germany (Grimma) and Romania (Bucharest/Ploiesti) including the wholly-owned subsidiaries of EDL Anlagenbau Gesellschaft mbH in Leipzig (Germany), EDL Engineering TOV in Severodonetsk (Ukraine), JSC Gazintek in Kiev (Ukraine) as well as a representative office in Moscow (Russia). Together they form a potent and unique engineering network in Central and Eastern Europe.

All group companies feature a uniform organizational structure and each of them is able to set up entire systems and plants with their specialists and equipment.

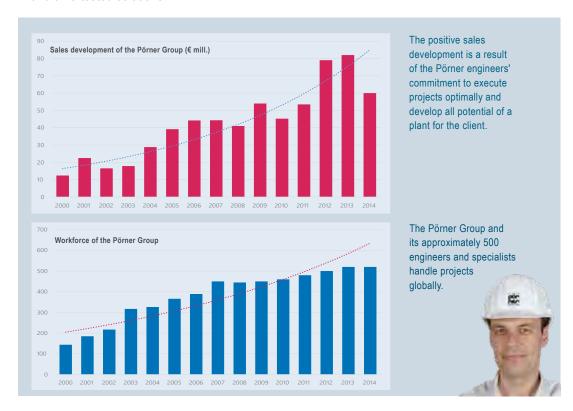
The group has established a close working relationship with leading licensors and process partners, regulatory bodies, suppliers and construction contractors. Therefore, the Pörner Group is able to execute complex state-of-the-art projects in a flexible manner, within the prescribed time and budget limit.



AN INNOVATIVE TECHNOLOGY AND SERVICE PROVIDER

Process competence is the necessary basis for putting state-of-the-art technologies into practice worldwide, as well as for implementing projects from classical engineering through to turn-key plants, all from one source.

The long list of international references of the Pörner Group gives clients the security so that they can entrust their investment to a partner who can rely on long years of experience, special know-how and time-tested solutions.



QUALITY / CERTIFICATIONS

All companies of the Pörner Group operate a Quality and Safety Management System certified by TÜV in accordance with EN ISO 9001:2008 and SCC**: 2011 safety certificate. This is a pre-condition to plan and build industrial plants utmost safely and environmentally friendly.

Since 2012 the Pörner Group has been certified in Russia and entitled to do engineering, as well as construction and installation services for the Russian refinery industries according to Russian standards.





Revamp of the vacuum distillation unit VT3 for PCK Raffinerie GmbH in Schwedt / Germany

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SERVICE PORTFOLIO OF THE PÖRNER GROUP

The Pörner Group provides all engineering services required for the construction of state-of-the-art, automated and highly productive process plants: from a single source, forming an integrated unit.

As a process-oriented plant engineering company the Pörner Group assists its clients from the very first concept through to the turn-key completion of the plant: in each project phase, tailored to the customers specific requirements.

ALL FROM ONE SOURCE

PROJECT DEVELOPMENT

- Consulting
- Conceptual design
- Technology selection and procurement
- Project study including budgeting (Project definition studies)
- Authority engineering

STUDIES

- Feasibility studies / Profitability analyses
- Environmental impact assessments
- Safety risks analyses / Safety reports
- Expert reports / Test reports
- Market studies

PROJECT MANAGEMENT

- Project management
- Coordination and expediting
- Contracting
- Claim management
- Training of plant personnel
- After-sales services

ENGINEERING SERVICES

- Licensing
- Basic engineering / FEED
- Detail engineering
- Global sourcing / Procurement of equipment and external services
- Delivery of entire plants
- Local construction supervision
- Commissioning

"Your project: as unique as your fingerprint"



CORE COMPETENCES

BITUROX® BITUMEN: THE WORLD'S NUMBER ONE

The Pörner Group is licensor for the Biturox® process, the leading bitumen oxidation technology for the production of high-quality bitumens in modern refineries. With the Biturox® process it is possible, by way of controlled oxidation to produce high-quality bitumen from a greater range of crude oils and refinery feedstock. The resulting product is bitumen that has improved thermal susceptibility and stability.



Biturox® PARCO, Pakistan, 2012

The Pörner Group licenses, designs and supplies turn-key Biturox® plants according to customers' requirements, also as an all-round package including the related infrastructure, such as tank farms, filling and/or packing stations.

In four decades the Pörner Group has granted more than 45 Biturox[®] licenses. 39 plants have been built world-wide.



FORMALDEHYDE AND ITS DERIVATIVES



Formalin plant, Dynea Erkner GmbH, Germany, 2015

For more than 20 years Pörner has been cooperating with renowned European licensors and know-how partners to build plants for the formaldehyde product family, such as: Formalin, UFC, hexamine, pentaerythritol, UF, MUF, MF, PF resins, novolak und bakelites.

In close cooperation with Dynea, a long-time partner, the silver catalyst process for the production of formalin has been constantly improved to become the best of its kind. Technical and economic references as well as 20 plants so far, confirm that.

FORMALDEHYDE + DERIVATIVES

FOCUS ON PROCESS ENGINEERING

Process engineering as the driving force of plant engineering is of particular importance for the Pörner Group. 50 process engineers develop and optimize processes that are one step ahead of the competition. This is why the company maintains laboratories and pilot plants for chemical tests and analyses.

In cooperation with leading research institutes, the Pörner Group develops new technologies for large-scale plants and optimizes own technologies, such as:

- The Biturox® process
- Solvent deasphalting process (SDA) for the sustainable processing of refinery residues
 - Dewaxing / deoiling of slack wax to produce base oils
 - Pörner Bitumen Packing System
 - High-purity silicon gained from rice husks





SDA test station, Leipzig

REVAMP - SUSTAINABILITY IN A SPECIAL FORM

The product quality, energy efficiency, environmental technology and operational safety of a plant can be significantly improved by the application of new technologies. The necessary investment costs may only be 10 to 20 % compared to a new construction project and can be realized within a relatively short time during regular shutdown times.

The Pörner Group and, in particular its subsidiary, EDL Anlagenbau Gesellschaft, Leipzig, are declared revamp specialists. In the last ten years around 90 revamps have been successfully completed.

Revamp benefits:

- Increased product quality
- Optimized process management (debottlenecking)
- Higher environmental compatibility
- Less energy consumption
- Better availability and safety



Modernization of crude oil distillation plant RD4, OMV AG, Austria, 2014



EDL - the revamp specialist from Leipzig

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Erection Polyethylene plant PE4 and extension including black colouring unit in Schwechat / Austria for Borealis Polyolefine GmbH

PROJECT EXECUTION

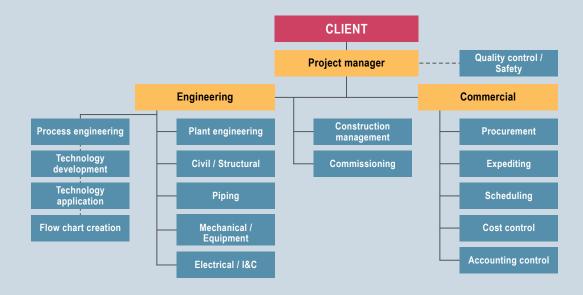
The name Pörner stands particularly for a decisive extra when it comes to project execution. The corporate structure, covering all engineering disciplines needed to set up complete industrial facilities, as well as 500 engineers and specialists with a wealth of experience, guarantee that projects are executed from one source, based on the clients' specifications and standards - and the applicable national norms (DIN, ANSI, GOST, etc.).

Short decision-making paths are the basis for realizing highly automated process plants according to the concept "Anlagenbau 4.0" (which means to take a holistic approach to all components and systems for optimization) un-bureaucratically and flexibly, as well as efficiently and budget-friendly.

ANLAGENBAU 4.0

For large-scale projects the Pörner Group offers:

- Know-how in executing projects worldwide
- Complete organizational structure including all disciplines
- Engineering capacities for large-scale projects (approx. 650,000 h/a)



For each project a project team is formed depending on the needs. Task force teams for special assignments or project teams of matrix-type organization for large-scale projects make sure that the client's requirements are met.

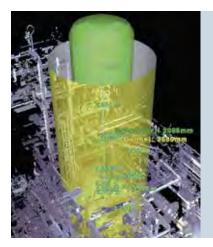
For the client's convenience there is only one contact for the overall solution and coordination: The Pörner Project Manager.

"More than 40 years of experience in plant construction – your reliable engineering partner"

MODERN ENGINEERING SOFTWARE

The ongoing trend in plant engineering is characterised by reducing project lead times with increasingly stringent quality requirements. All planning phases of a project are created by state-of-the-art software tools and innovative EDP systems.

In addition to the known systems such as, Comos PT and SmartPlant P&ID for the development of schemes with database connection or 3D planning software such as, PDMS, PDS and SmartPlant 3D, the company also promotes in-house software developments. Detailed information on the utilized software applications can be found on the Pörner Homepage (www.poerner.at).



Software solutions of the latest generation visualize plants and allow a dynamic simulation of processes. When it comes to revamps, site surveying is done by laser scanning.

Collision check by laser scanning for the lifting of the new reactor at OMV Burghausen

SOURCING FROM THE BEST



Manufacturing of the new HDS3 reactor at MAN for OMV, Austria 2015

The Pörner Group has established close ties with leading vendors for decades.

As an important element of the concept "Anlagenbau 4.0" the equipment is sourced globally from the most reputable suppliers on the world market and added to components (steel structures, mechanical / electrical equipment etc.) and services that are available locally.

So, clients can enjoy a high plant availability at favorable overall costs.

COOPERATION BASED ON PARTNERSHIP

Mutual trust between the client and the future end-user of the plant and the Pörner Group, as the custodian of their interests, is the foundation to jointly build complex plants in an optimal manner. This is realised by means of engineering, time scheduling and budget-friendliness.

Over the years, the Pörner Group has earned the respect and trust of renowned refineries and chemical plant operators, such as OMV, Borealis, PCK, Shell and TOTAL by working on the basis of engineering and framework agreements.

The company offers:

- · Customer-oriented execution concepts
- · Full independence in the selection of suppliers
- · Growth in value
- High plant profitability
- · Significant cost reductions by optimized process
- · Environmentally plant engineering and construction
- · Project languages: German, English, Russian



Signing the contract for a Biturox® plant with PARCO, Pakistan, 2011

















THE PÖRNER CORPORATE CULTURE

Working for the Pörner Group means teamwork with direct communication and clear-cut structures. Specialists who know the ins and outs of plant engineering over many years are the foothold of the company. A combination of experienced lead engineers and dynamic young talents are the basis for the performance capability of the Pörner project teams.

Since its foundation the Pörner Group relies on the personal responsibility of the staff based on a continuous process of education and learning. Personal commitment of all employees produces extraordinary results with the extra of innovation, flexibility and productivity that is typical for Pörner.



Project and department manager meeting in Vienna

REFERENCES: REFINERIES



CRUDE OIL DISTILLA-**TION UNIT RD4**

Modernization of the crude oil distillation unit (RD4) in several stages with different focuses

Scope of Pörner and EDL:

FEED, basic engineering, detail engineering, procurement and expediting, construction supervision, commissio-

Client: OMV AG

Location: Schwechat / Austria

2010 / 2014 / 2016



DESULPHURISATION UNIT DK2

Modernization of the desulphurisation unit by replacing a fission reactor and new built stripping columns

Scope of EDL:

Basic engineering, authority engineering, detail engineering, procurement, site and construction supervision

Client: PCK Raffinerie GmbH

Location: Schwedt / Germany

Year: 2014



VAKUUM DISTILLATI-ON UNIT VT3

Replacement of the vacuum column for energy efficiency increase of the vacuum distillation unit and modification to the deep-cut process

Scope of EDL: Extended basic engineering, detail engineering, procurement, site and construction supervision

PCK Raffinerie GmbH

Location: Schwedt / Germany

Year:

FURTHER REFERENCES				
Plant	Client	Location / Country	Year	
Revamp of hydrodesulp- hurisation plant HDS3	OMV AG	Schwechat / Austria	2015	
Revamp of alkylation and FCC plant	TOTAL Raffinerie Mitteldeutschland GmbH	Leuna / Germany	2014	
Hydrodesulphurisation units for kerosene and diesel fuel	OJSC "Tatneft"	Nizhnekamsk / Russia	2014	
Revamp tank farm	OMV Petrom SA	Petrobrazi / Romania	2013	
Atmospheric and vacuum distillation unit AVT-6	Russian refinery	Russia	2012	
Propane deasphalting plant	H&R Ölwerke Schindler GmbH	Hamburg / Germany	2011	
Revamp FCC gas concent- ration unit	PCK Raffinerie GmbH	Schwedt / Germany	2010	

REFERENCES: BITUROX®



BITUROX® PLANT ROSTOV

Construction of a Biturox® plant for the production of paving-grade bitumen

Pörner Basic & detail engineering, procurement, supply of key comoponents, scope: construction supervision, commissioning support, documentation

OJSC Novoshaktinskij Zavod Nefteproduktov Client:

Rostov / Russia Location: 2015 Year:



BITUROX® PLANT SAMIR

Turn-key Biturox® bitumen plant including tank farm and truck filling station

Pörner scope: General planning incl. license, financing support, project manage-ment, basic engineering, detail engineering, procurement and delivery of the entire plant, construction supervision, commissioning, training and documentation

Client:

Société Anonyme Marocaine de l'Industrie du Raffinage (SAMIR)

Mohammédia / Morocco

Year: 2011



BITUROX® PLANT PARCO

Construction of a Biturox® plant for the production of paving-grade bitumen

Pörner Basic & detail engineering, procurement, supply of key comoponents, scope: construction supervision, commissioning support, documentation

Client: Pak-Arab Refinery Ltd (PARCO) Qasba Gurjat / Pakistan Location:

2012 Year:

FURTHER REFERENCES

Location / Country Year
Sohar / 2015 Oman
Ras Tanura / 2015 Saudi Arabia
Baiji / 2015 Iraq
Barauni / 2013 India
Gujarat / 2012 India
Karbala / 2012 Iraq
La Rabida / 2011 Spain

REFERENCES: CHEMICAL/PETROCHEMICAL



INDUSTRIAL-SCALE POLYETHYLENE PLANT PE 4

New industrial-scale polyethylene plant based on the Borstar process as partner of Tecnimont Spa.; general planning to extend the plant by a black coloring unit in 2008

Detail engineering for civil/structural and electrical, procurement support, Pörner construction supervision, site coordination according to BauKG scope:

Client: Borealis Polyolefine GmbH Location: Schwechat / Austria 2005 / 2008



WAX MOLDING PRODUCTION UNIT

Modernization of an existing wax molding production unit with capacity expansion and energy saving measures

Pörner Detail engineering of the new wax molding production lines, cooling & control system, procurement, supply of equipment, site supervision scope:

Client: AMOC Alexandria Mineral Oils Company Location: Alexandria / Egypt

2014



POLYPROPYLENE PILOT PLANT

Revamp of the polypropylene production plant on the Borstar process

Pörner Detail engineering for civil/structural, electrical/I&C, equipment and scope: piping, process support, construction supervision, commissioning

Client: Borealis Polyolefine GmbH Location: Schwechat / Austria

Year:

FURTHER REFERENCES				
Plant	Client	Location / Country	Year	
Cyclohexanon plant	DOMO Caproleuna GmbH	Leuna / Germany	2015	
Modernization of phenolic resin plant	Dynea Erkner GmbH	Erkner / Germany	2015	
Raw material purification for PE4 unit	Borealis Polyolefine GmbH	Schwechat / Austria	2015	
Modernization of formalin plant	LERG SA	Pustkov / Poland	2015	
Formalin resin plant	Latvijas Finieris AS	Riga / Latvia	2014	
Modernization of buta- diene production plant	OMV AG	Schwechat / Austria	2014	
Modernization of fertilizers and basic chemicals production plants	Borealis Agrolinz Melamine GmbH	Linz / Austria	2013	

REFERENCES: CHEMICAL/PETROCHEMICAL



HEXAMINE PLANT

Construction and delivery of a hexamine production plant incl. GOST-R certificate

Pörner General planning incl. authority engineering, basic & detail engineering, scope: procurement, supply of equipment, material & process control system, construction supervision, start-up assistance, documentation

Client: OJSC Metafrax Location: Gubakha / Russia

Year: 2011



FORMALIN PLANT

Turn-key formalin plant based on the Dynea silver catalyst process incl. methanol and formalin tanks and methanol unloading station

Pörner Turn-key incl. authority engineering, basic and detail engineering, scope: procurement, delivery, construction supervision, commissioning

Client: LANXESS AG

Location: Krefeld-Uerdingen / Germany

ear: 2011

FURTHER REFERENCES

Plant	Client	Location / Country	Year
Solar silicon plant	PV Crystalox Solar Silicium GmbH	Bitterfeld / Germany	2011
Copper / Zinc catalyst production plant	Südchemie AG	Heufeld / Germany	2009
Polyester and alkyd resin plant	Spolchemie	Usti nad Labem / Czech Republic	2007 / 2009
Novolac and powder bakelite plant	OSJC Metafrax	Orechowo-Sujewo / Russia	2009
Polyamide 6 production plant	OSJC Metafrax	Gubakha / Russia	2009
Formalin plant	Dynea Austria GmbH	Krems / Austria	2009
Glycidic ether production plants	LEUNA Harze GmbH	Leuna / Germany	2008



CATALYST PRODUCTION PLANT

Turn-key construction of the world's first high-tech catalyst production plant for the gas-to-liquid process with no prior pilot plant

Pörner Scope: Turn-key incl. basic & detail engineering, EMSR incl. process control system, procurement, delivery, construction supervision, commissioning Client: Süd-Chemie Qatar WL
Location: Messaieed / Qatar

Year: 2008

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REFERENCES: GAS INDUSTRY



LIQUID PETROL GAS LOADING FACILITY

Turn-key construction of a LPG loading station for tank trucks with a capacity of 240 TPD

Pörner Authority engineering, basic engineering, detail engineering, procurement, project management, site supervision, start-up

scope:

Client: OMV Petrom SA Location: Petrobrazi / Romania

2014



NATURAL GAS REDUCTION UNIT

Revamp of a natural gas reduction unit with exchange of the whole prime line installation (grid gas connector, pre-heating, pressure reducing valve) acc. to variation study

Basic & detail engineering, authority engineering, project management, tender, site management, commissioning support Pörner Scope:

Client: Borealis Agrolinz Melamine GmbH

Location: Linz / Austria

2013



REVAMP OF GAS STORAGE FACILITY AT SCHÖNKIRCHEN

Revamp of gas storage facility at Schönkirchen/Reyersdorf

Pörner Tendering, bid comparison and award recommendation, project management, commissioning assistance, verification of invoices and bills scope:

of quantities for electrical/I&C, process control system Client: PLE con / OMV GAS

Location: Schönkirchen Reyersdorf / Austria

Year:

FURTHER REFERENCES				
Plant	Client	Location / Country	Year	
LPG tank wagons loading facility	OMV Petrom S.A.	Petrobrazi / Romania	2014	
Air separation plant	LINDE Gas Vietnam	Phu My / Vietnam	2013	
TGL- gas compres- sor stations	Salzburg Netz GmbH	Auerbach & Feistritz / Austria	2013	
TGL- gas pressure gauging stations	Salzburg Netz GmbH	Maglern & Arnold- stein / Austria	2013	
Air separation plant	Carburos Air Products Group	Sagunto / Spain	2012	
Gas sweetening plant / Sulphur recovery plant	French Engineering Company	Kharyaga / Russia	2011	
Modernization Natural gas processing plant Aderklaa I	OMV AG	Aderklaa / Austria	2008	

REFERENCES: POWER GENERATION & **ENVIRONMENTAL INDUSTRY**



USED OIL RE-REFINING PLANT (HYLUBE2)

Construction of a used-oil re-refining plant (Hylube2) based on UOP technology

EDL scope:

Basic engineering, detail engineering, drawing up bid and order documentation, commissioning assistance

Puralube Raffinerie GmbH

Location: Zeitz / Germany

2008



BIOETHANOL PLANT AGRANA

Turn-key construction of Austria's largest bioethanol plant with capital investment of EUR 125 mil. A positive environmental compatibility assessment was completed within seven months and the plant was built within just 14 months, on time and on budget.

Pörner scope

General planning, incl. environmental compatibility assessment, project management, detail engineering, site supervision, commissioning

Location / Country

Year

Client: Location:

Plant

Agrana AG Pischelsdorf / Austria

Client

2007 Year

FURTHER REFERENCES



PLASTICS RECYCLING PLANT MBA

General planning of a recycling plant to recover single-variety plastics from electronic and automobile scrap

Pörner scope:

Planning incl. architecture, civil/structural, engineering for mechani-

cal and electrical/I&C, construction supervision

Client:

Kematen / Austria

Location: Year:

MBA Polymers Austria

OJSC Norilsk Nickel 2015 Sulfur recovery plant Norilsk / Russia 5.8 MW back pressure OMV Petrom SA Petrobrazi / 2015 turbine & generator Romania Borealis Polyolefine 2015 Schwechat / Recovery area for plant RP2 GmbH Austria Siemens VAI Metals Novoshakhtinsk / 2012 Water supply & distribution system for Technologies GmbH Russia a steel mill 2012 Carbon dioxide Air Liquide Austria GmbH Pischelsdorf / liquification plant Austria Kremsmüller Group Karlsruhe / 2012 Rhine harbour steam turbine power plant Germany Block 8 Emission reduction SHELL Deutschland Oil Heide / 2011 GmbH Germany

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