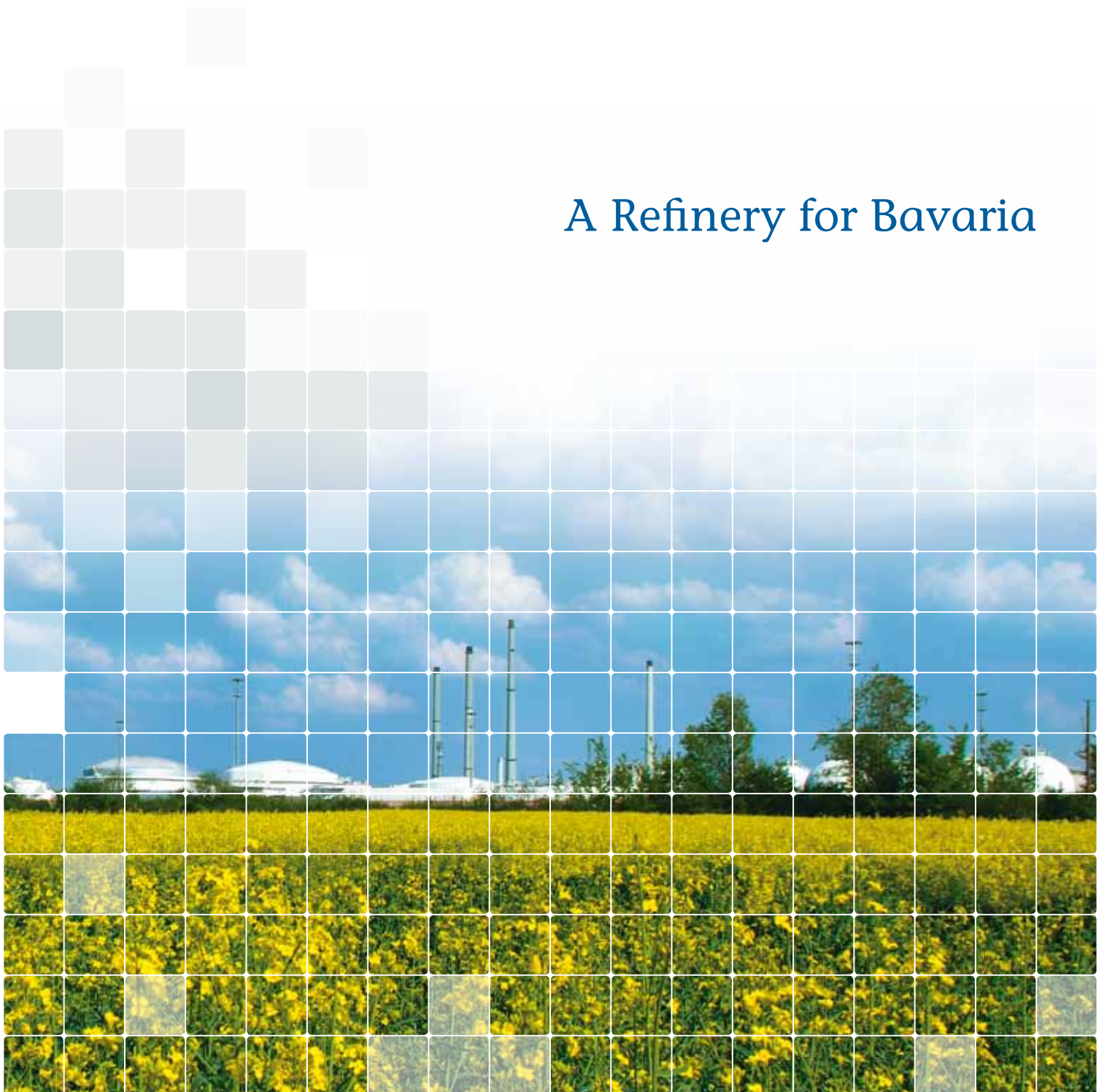


# A Refinery for Bavaria



# Energy for Bavaria: From One of the Most Modern Refineries in Europe

*After extensive modernisation, optimisation and construction of new process plants, BAYERNOIL is now among the leading manufacturers of mineral oil products in Germany and Europe, with a high flexibility in processing and the range of products. Nearly two thirds of the mineral oil products consumed in Bavaria come from the process units in Neustadt and Vohburg: an important contribution for a reliable and environmentally friendly energy supply in the region. 24 hours per day, 365 days per year.*



Mineral oil products still count to the most important energy carriers, even if their sale in Germany tends to decrease and the demand moves away from mogas and heating oil versus a higher consumption of diesel and jet fuel. BAYERNOIL had foreseen these changes at the right time and used these future challenges as a chance for a revamp, by building new plants, such as a Mild Hydrocracker, one of the largest hydrogen plants in Germany, plus a sulfur recovery unit, and by changing and modernising the existing plants. In the international competition, the joint venture refinery is "fit for the future" and one of the most modern mineral oil processors in Germany and in Europe. BAYERNOIL fits smoothly in the chain of key industries in the high tec location Bavaria: automotive, chemical, medical-technical

and other industries which place Bavaria on top in Germany and in Europe. The motor of this development and the base for this growth was and is a guaranteed and affordable supply of motor and heating fuels and other mineral oil products.

It is therefore quite obvious that the BAYERNOIL refining company shows its location in the name. The decision to locate the precedent refineries in Bavaria was determining for the future of the region. The plain between Kelheim and Ingolstadt near the Danube river in the sixties of the past century was an important requisite for the settlement of an energy center with refineries and power stations which until today promoted significantly the regional development.



### **Top Joint Venture Performance**

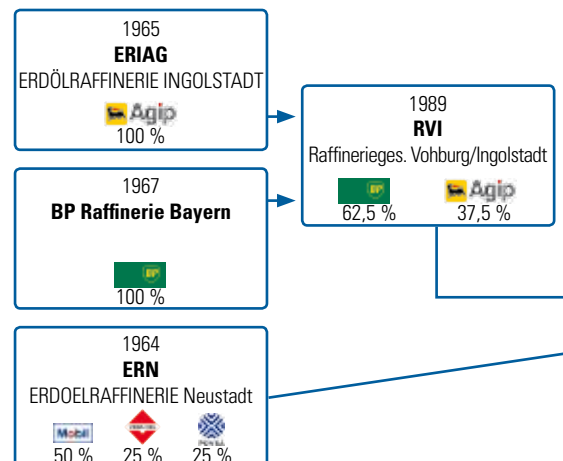
One refinery, two sites: these are the united BAYERNOIL refineries. The two locations in Vohburg and Neustadt are connected by 11 pipelines and work like one establishment, being the largest refinery in Bavaria right in its center. The major part of the supplies arrives via the transalpine pipeline (TAL) which starts at Trieste (Italy) and is routed via Ingolstadt to Karlsruhe at a length of 759 kms. From Africa, Russia, Venezuela, Saudi Arabia, Norway and other countries it transports the crude oil safely and reliably to Bavaria. In the BAYERNOIL operation plants, the staff processes from the crude oil high value products such as mogas, diesel, jet fuel, LPG, heating fuels and bitumen for the shareholders who supply commercial and end users.

Not only the production in the two locations is fully integrated. The refineries are tightly connected to the neighbouring villages and towns. As a “good neighbour”, BAYERNOIL sees itself as a partner for the local people and regional commerce and industry. The refinery informs regularly on what is going on within the company. Orders are committed to regional partner companies whenever practicable. The importance of common cooperation is also expressed in the BAYERNOIL motto “successful together”.



## The BAYERNOIL History: More than Four Successful Decades

*For over 45 years, the refining and power generation industry of Ingolstadt-Vohburg-Neustadt has marked the Danube plain between Ingolstadt and Kelheim. Originally planned to secure the energy supply in Bavaria on a new economic base, without own coal and far from the coal mines, this industrial region developed into the Bavarian energy center and therefore the driving motor of the region since the sixties of the past century. BAYERNOIL today continues this success story for its shareholders OMV, Ruhr Oel, Agip and BP.*



### Well-known Owners

BAYERNOIL's history reflects the eventful history of the mineral oil industry. Today, four shareholders deliver the feed from which the refinery as a job processor produces high quality yields in Neustadt and in Vohburg.

**OMV Deutschland AG** with 45 % holds the greatest share in the refinery. **OMV AG** in Vienna (Austria), the mother company, is the leading oil and gas group in Central Europe and active in exploration, production and distribution on several continents.

International is also the history of **Ruhr Oel GmbH**: It was created in a worldwide first cooperation between a petroleum producing and a petroleum consuming country. The joint venture partners – the BP Europa SE and the Russian corporation Rosneft – each own half of Ruhr Oel which holds 25 % of BAYERNOIL.

A 20 % share is held by **Eni Deutschland GmbH**, active in Germany since 1960, and an affiliate of the Italian Eni group, one of the worldwide oil leaders. Eni extracts, processes and distributes its products in Europe and in Northern and Southern America.

**BP Europa SE** holds today 10 % of the BAYERNOIL shares. It is a leader in Germany in the refinery, mogas station, lubricants and petrochemical business with the brands ARAL and CASTROL.

### Success Story with Local Roots

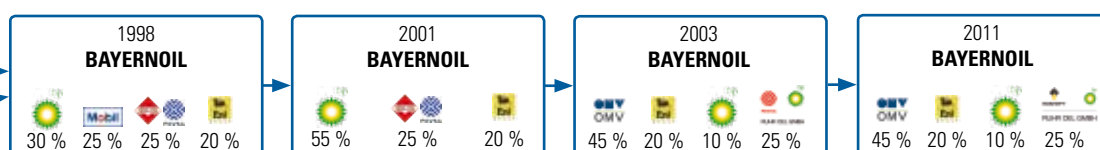
The origin of the Ingolstadt refinery center goes back to the initiative of Enrico Mattei, first president of the Eni group, and Dr. Otto Schedl, former Bavarian secretary of state for economics. The fifties and sixties of the past century were a phase of rapid reconstruction with a high consumption growth rate and a parallel energy and mineral oil consumption. Bavaria was economically provided with mineral oil products through the construction of refineries and pipelines from the Mediterranean sea.

In 1964, the former Bavarian prime minister Alfons Goppel inaugurated the Erdoelraffinerie Neustadt GmbH & Co. oHG (ERN) in **Neustadt**. The refinery grew continuously and in 1998 became an important part of the BAYERNOIL joint venture. Since 2008, there are production plants in operation which are among the most modern units in Europe.

In 1965, production started in the Erdoelraffinerie **Ingolstadt AG (ERIAG)**, built by the Eni group, approximately 30 kms from Neustadt.

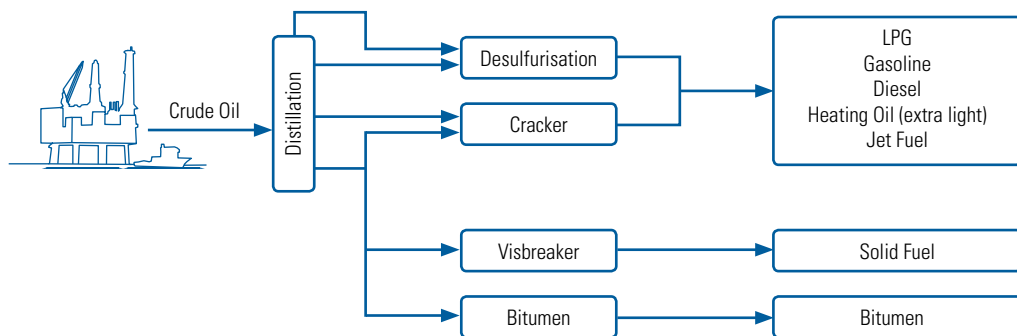
In 1964, BP started the refinery (BP Raffinerie Bayern) in **Vohburg**, situated 20 kms from Neustadt. Small and medium enterprises settled near the refineries and bring additional economical power into the region.

The changes in the mineral oil market determined the going of the three refineries. In 1989, ERIAG and the BP Bavarian refinery fused for economical reasons and formed the Raffineriegesellschaft Vohburg/Ingolstadt (RVI). On 1st January 1998, ERN joined – BAYERNOIL was born. Ten years later, the joint venture refinery was further changed. From 2005 to 2008, the shareholders invested in Neustadt and in Vohburg appr. 600 m€ for the optimisation and modernisation of the existing plants and for the construction of new processing units. The increased demand for diesel and jet fuel, however, meant the end of the mogas production in Ingolstadt: The refinery closed in August 2008.



# From the Crude to the Products: the Mineral Oil Production Process

*What BAYERNOIL accomplishes in its plants is a combination of distillation, conversion and after-treatment. Or in simpler terms: Finishing. This exactly is meant by "refining". This sounds simple, but actually is an extremely complex process, since the ten million tons of raw oil per year are required to pass numerous process units before the entire range of finished goods and raw materials for the petrochemistry is obtained.*



The diagram on the left side shows a simplified flow chart of the main products. The crude oil is heated in the distillation and separated into its components, the fractions. The fractions are then further processed mainly in the desulfurisation, vacuum distillation units and in the so-called "Crackers" which split the heavy products in LPG, mogas and diesel.

Each process is based on the previous one, all products are processed or used as energy carriers. This contributes to the protection of the environment and resources. Production runs in non-stop operation and is controlled by highly qualified staff. Via a transparently designed quality management system in accordance with **EN ISO 9001** and a smooth quality control it is ensured that the finished products comply with the high standards.

#### The Main BAYERNOIL Products

**LPG** (propane/propene, butane/butene) are gasiform at ambient temperature and stored under pressure. Propene and butene are used in the chemical industry to produce synthetic materials, propane and butane are used as motor and combustion fuels.

There are different **Mogas** qualities (motor fuels) classified according to the octane number, the knock-rating measure: super mogas (min. 95 octane) and super plus (min. 98 octane). To reach the required pre-ignition resistance, the hydrocarbons contained in the crude oil are then processed further through reforming and isomerising.

**Diesel** is blended from components with a boiling range from 200 to 360 °C. These distilled components require desulfurisation for environmental reasons. Another important quality criterion is the cetane number informing on the ignition performance of the diesel fuel.

**Jet A-1** or kerosene is the name of the aviation fuel which contains relatively much molecules of the same density. Differently to the other fuels, kerosene does not ignite too early, burns nearly without any residues and remains fluid even at extremely low temperatures.

**Heating Oil** is offered in an extra light low sulfur quality for burning in ovens and central heating. From the residues of the mineral oil processing, a heavy fuel for power stations is produced, the so called "solid fuel".

**Bitumen** is gained from heavy, viscous, asphalt-basic crude oils. The different kinds of bitumen are applied in road constructions as well as the preservation of airports and other surfaces with asphalt.



# Successful Together: the BAYERNOIL Staff

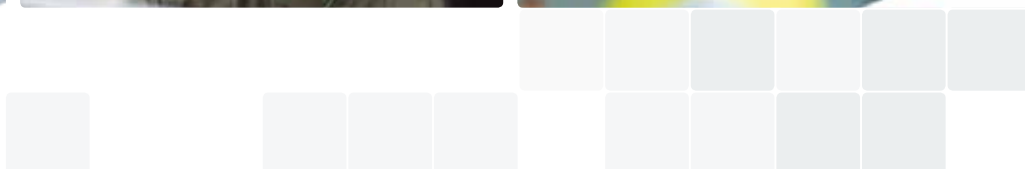
*"Successful together", the BAYERNOIL motto, expresses a conviction – it means that each enterprise is only as good as the people behind it. This principle is particularly important for the crude oil processing industry. Notwithstanding automated processes, most modern data management and maximal technological plant safety, BAYERNOIL's success in first line depends on the commitment, motivation and qualification of its staff.*

No matter if shift worker, plant operator, chemical engineer or firefighter – all of them say "We identify ourselves with BAYERNOIL." The successful company history provides the evidence for a professionalism expressed in the performance and economic success of BAYERNOIL. This success is based on the commitment and cooperation of the entire staff, including the contractors' personnel.

This commitment is carried on by a motivation owned to many components: performance and market related salaries/wages play the same important role as the refinery pension, a good work climate, career perspectives, success participation and more social benefits. A slim organisation, an open management

style in a spirit of partnership and the willingness to meet challenges with new ideas grant to each staff member the individual space for further development according to his/her faculties.

Companies grow with their staff. Every year, BAYERNOIL trains young men and women as chemical workers and therefore is an important local center for apprentices offering interesting and future-oriented work chances. Training and qualification updates are open to all of the BAYERNOIL team: BAYERNOIL supports its staff in the regular update of knowledge by internal and external training, in the refreshing of personal and professional qualification. This enhances the improvement of work procedures and plant operation without disturbances.



### Staff is in the Focus

All these measures help to keep BAYERNOIL fit for the future. In BAYERNOIL, it is not alone the know-how that counts: first in line are the people. BAYERNOIL cares much for the health of its staff. The works doctor regularly makes checkups of the employees and their work places according to ergonomic requirements. Health by physical fitness is on the (voluntary) programme after work and outside the refinery fence in the different disciplines of the refinery sport group. Here, the BAYERNOIL team is also successful together: mountain walking, biking, skiing, football, tennis, bowling – in common activities, the singles become teams.

The BAYERNOIL philosophy, however, does not stop at the refinery fence. BAYERNOIL is well connected to the neighbouring towns and villages in the districts of Pfaffenhofen and Kelheim, thanks to its personnel because the staff members at home take on important functions and mansions, through political activities, as voluntary firefighters or in sport associations. "Successful together" is lived partnership beyond the work place.



# Safety for People and for the Environment: BAYERNOIL Lives Responsibility

*Safety, health, and the environment are top priorities in BAYERNOIL. From the apprentice to the manager, all feel responsible for safe work and secure plant operation. With the modernisation and optimisation of the process plants, BAYERNOIL has contributed much to climate protection and better environmental friendliness. The legal requirements are fulfilled and the commitment goes well beyond since work safety, environmental and energy balances are continuously improved. A responsible approach to the environment and natural resources is quite natural for us.*



For years now, BAYERNOIL's accident/incident rate has remained below the average of the chemical industry: a result of the conviction that each accident/incident is avoidable. The promotion of the consciousness and commitment for safe work is an important part of the safety concept. Specific prevention is achieved by team members who think ahead and act responsibly on their own account and for their colleagues.

Process safety is guaranteed by independent control systems which are permanently updated and continuously revised. Beyond these internal checks, the safety of the refinery is periodically documented by TUV checks. In the maintenance turnarounds, the operation units are shut down, opened, cleaned, tested, repaired if necessary, closed and restarted. Specialised partner companies assist the BAYERNOIL team in these activities.

#### **Environmental and health protection: for us a matter of course**

With its participation in the **Umweltpakt Bayern** (Environmental Pact of Bavaria), the refinery voluntarily commits to sustainable economic activities and qualified services for environmental protection. Doing so, the further improvement of today's already existing good energy efficiency and so an additional reduction of the CO<sub>2</sub> emission are the focal point of all considerations.

Thanks to the environmental management systems in compliance with **EN ISO 14001** and **EMAS** (Eco- Management and Audit Scheme), BAYERNOIL ensures an environment-oriented and sustainable operational management. The environmental services are made transparent here and disclosed to interested citizens. For better meeting the principle of the healthy employee, BAYERNOIL has introduced the **OHRIS** (Occupational Health and Risk Management System), which was developed by the Bavarian State Government and contributes to improvements in the occupational and health protection areas.

#### **Prepared for Everything: Emergency Management**

To carry active responsibility means to prevent safety risks. This also means to be prepared. That is why BAYERNOIL maintains a specific emergency management in which the complete refinery is involved. Emergency situations are periodically simulated in exercises for being ready to cope with real events, safely and professionally. An important role is covered by the work fire brigade with professional and auxiliary firefighters. They work in shifts and are available around the clock for mutual assistance in case of alarm, rescue service, fire protection, hazardous material and oil leaks. The refinery fire brigade also assists other firefighters, help organisations and authorities in the neighbourhood.



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