

Energising the north



**RAFFINERIE
HEIDE**





“There is a committed team behind every success.”



Running a refinery means taking responsibility. Responsibility for our employees, our neighbours and our region. We also take responsibility through the meaningful use of mineral oil and through cross-industry collaborations and partnerships. Our shared vision ranges from the generation of ‘green’ hydrogen to the production of synthetic hydrocarbons in order to produce climate-friendly fuels in the future, such as for aircraft. It is the co-operation of everybody and the shared commitment with the goal of achieving

something special. With our philosophy of continuous development, we put a strong emphasis on this team. This is the only way in which cooperation on projects such as KEROSyN100, the development of green kerosene based on wind energy, is possible. We are driven by commitment, innovation and experience. A passion for regional and social engagement also brings us together. Together, we are strong for our region.

Jürgen Wollschläger
Managing Director Raffinerie Heide GmbH

Our world is diverse.



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Raffinerie Heide is more than just a refinery. It is also a chemicals company that performs important tasks in the region.

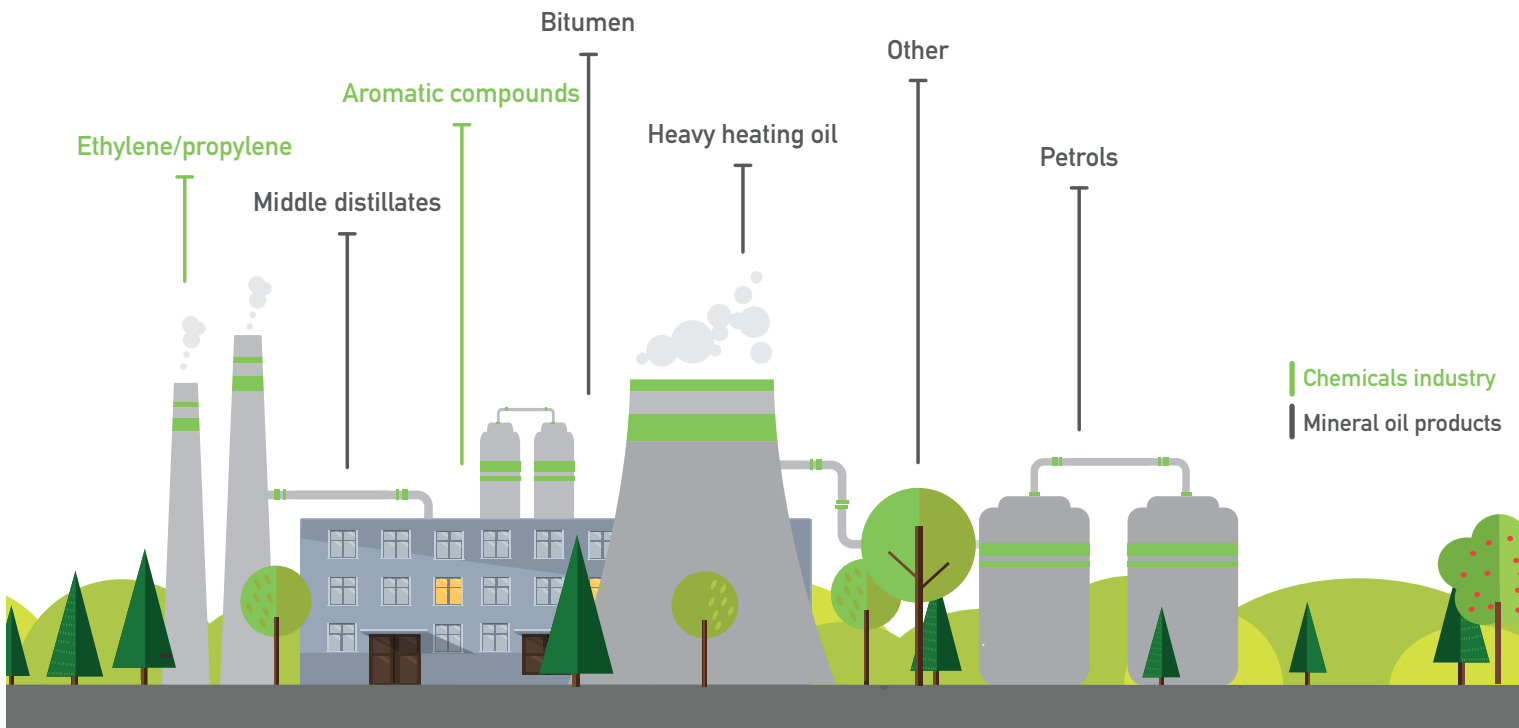
Products of Raffinerie Heide Present in everyday life

The average German consumes around 1,900 litres of crude oil each year. Most of this is from petrol, diesel and heating oil.

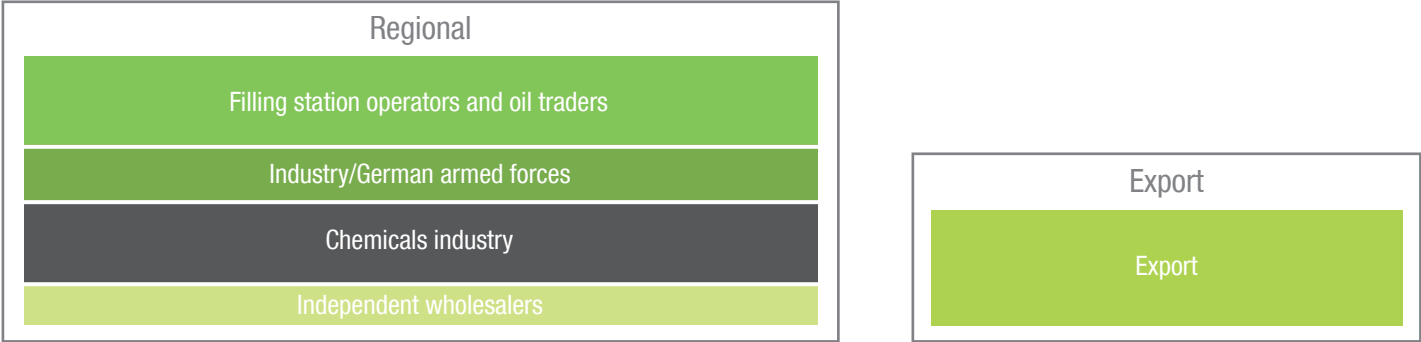
Without oil, our world would look a lot different. Whether it's high-gloss finishes for motor vehicles, rubbish bins in kitchens, fertilisers for the agriculture industry or the interior of aircraft, crude oil is essential everywhere.

As one of Germany's most modern refineries, we therefore not only produce traditional fuel, but also many base materials for the chemicals industry. We also work with additional partners to utilise power-to-liquid technology for refinery processes. This is not only an important contribution to the energy revolution on our part, but also an investment in order to keep our world mobile and to maintain a high standard of living.

Our range of products



Our approach



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Oil is a natural product with many constituents. Our systems ensure an optimal yield.”

From crude oil to a high-quality product

We have been processing crude oil for over 80 years. Our success is based on continuous modernisation and adaptation to new findings in relation to plant engineering and processes.

As a middle distillate refinery, we primarily produce diesel, heating oil and jet fuel. This specific production is made possible by means of a hydrocracker. Using this highly complex system, we are even able to transform heavy components of crude oil into diesel and other similar products through the addition of hydrogen. We can also modify the ratio between the products and adapt to market conditions. Consequently, our

degree of utilisation is higher than in traditional refineries.

The Nelson index serves as a reference for the technical state of a refinery. The higher this index, the higher the complexity of the systems. While European systems have a value of 6.5 on average, we achieve an index of 9.9. This makes us one of the most modern and flexible refineries in Germany.



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Our priority is customer satisfaction. We achieve this goal thanks to the highest level of quality.

Quality through expertise

The employees of the refinery laboratory are the guardians of quality. By conducting regular product analyses throughout the entire production process, they ensure that a DIN-standardised, and customer-specific, high-quality product is created from the naturally occurring substance of oil, which varies depending on its source.

This monitoring begins with the supply of the crude oil, at which point the constituents are checked as part of the initial analysis. Later in the production process, the semi-finished products that are obtained are professionally put

together so that the precise product required is produced with a consistent level of quality.

Quality is not only key to the products of Raffinerie Heide, but also to the way we do business. For us, quality also means the punctual, reliable processing of all orders as well as responding flexibly to customer requirements.

By following this approach every day, we ensure that we achieve our key corporate goal – Customers that are 100 per cent satisfied.

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Quality assurance through long-term thinking and actions.



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Those who work with hazardous substances must be proficient in handling them. Fire and accident protection are paramount at Raffinerie Heide.



Our culture is shaped by safety

All of our work is based on the pillars of health, the environment and safety. Our company works with latently hazardous products, and we are committed to ensuring the safe handling of these substances. All of our employees therefore receive regular training in the relevant safety measures. Our full-time on-site fire brigade is on hand in the event that anything happens despite all precautions.

Over 30,000 measuring points throughout the production chain ensure that even the most minor of faults are immediately passed on to the central control system. This safety culture has put us in the top group of European refineries when it comes to plant safety. There is scarcely any other company in the industry that achieves a better value.

Our employees and our goals

 around **50%**
have been at the company for
more than 20 years

 **250**
around
employees of partner
companies

 **560**
employees

 around **40**
trainees working in
three trades

Safety

Constant monitoring and inspection of our state-of-the-art systems and safety precautions as well as proactive approaches during our HSSEQ days. This stands for Health, Safety, Security, Environment and Quality, and unites all of our activities for the protection of people and the environment.

Commitment

Various projects and partnerships in the region as well as our involvement in our local area, such as through company tours, participation in the 'Lange Nacht der Industrie' (long night of industry) and Girls Day, are close to our hearts.

Quality and environment

Numerous certificates in accordance with various ISO standards, including in relation to safety in the workplace, are testament to our quality. Process improvements conserve resources, reduce energy consumption and increase raw materials yields.

Looking to the future

We look at the bigger picture and are involved in research, such as with the KERO-SyN100 project, in order to develop green resources, in addition to oil, for the production of fuel. We think about future generations and are well-positioned for the future.



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We are one of the most modern refineries in Germany. Because we invest in our employees.

Relying on one another

We see ourselves as a partner who can find solutions for joint tasks of high responsibility. In addition to an attractive salary with good social benefits and one-off payments, it is the working atmosphere in particular that makes working for us so attractive. Individual ideas and implementation proposals are welcomed and rewarded. In return, however, personal commitment is also required, whereby employees should

actively get involved in the continued development of the refinery.

The average age at the refinery is 43. Around 50 per cent of the employees have been working for us for at least 20 years. Working at the refinery is always a long-term commitment.

“The fuel depot in Brunsbüttel is our central hub for supplying our customers.

Our gateway to the world

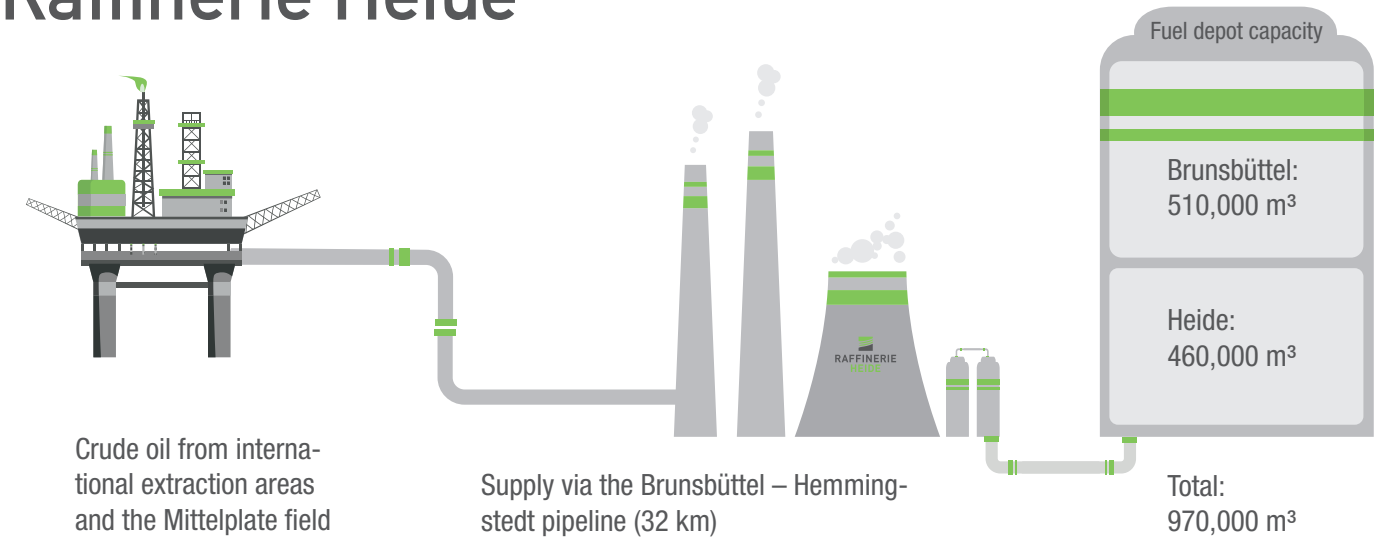
The refinery as a company is divided into two locations. The fuel depot in Brunsbüttel is the central hub for supplying our customers. We process the mineral oil at our facility in Hemmingstedt, near Heide.

The two parts of the company are connected by means of three pipeline systems with a total of nine pipelines, which directly bridge the 32-kilometre distance between the two company sites. The highly complex logistics is managed in the control room. With the help of the fuel depot at the central interface between the Kiel Canal and the

Elbe, we transport around half of our production by ship. The required crude oil is also delivered in Brunsbüttel, however.

We obtain the majority of our demands from different countries all around the world. We get the remaining oil resources from an oil field ‘right on our doorstep’. Brunsbüttel is also where the pipeline from the Mittelplate production station ends in the Wadden Sea. Consequently, we also play an important role with regard to the economic power of Schleswig-Holstein.

Supply of Raffinerie Heide



Transport and routes





“As a refinery, we are setting the path towards a green refinery of the future.”

“We have the opportunity to become part of the energy revolution as a refinery.”



The refinery of the future

Times are changing. What was fine and correct yesterday can be seen very differently today and tomorrow. As an employer, Raffinerie Heide has a responsibility with regard to its employees and their families. Our goal each and every day is to achieve economic success. Our success is based on a solid foundation of high safety and environmental standards, through which we contribute to environmental and climate protection. We want to actively shape this development as a 'green refinery' by broadening our perspective through the establishment of new business areas.

The production of synthetic kerosene and green hydrogen is a key part of a comprehensive energy revolution. We want to drive this development and are involved in the 'KEROSyN100' and 'Reallabor Westküste 100' (west coast 100 real-world laboratory) research projects. The goal is to establish a hydrogen industry in the German coastal areas together with our project partners. Schleswig-Holstein, in particular the west coast hydrogen region, offers lots of potential for this with the high volume of onshore and offshore wind energy.



Synthetic kerosene for eco-friendly flying

As an innovative and responsible company, we are taking significant steps towards a 'green future'. Under the direction of the University of Bremen, we have been involved in the KEROSyN100 research project funded by the Federal Ministry for Economic Affairs and Energy together with five other partners from industry and science. The aim of the project is to develop and produce eco-friendly, synthetic kerosene using wind energy.

We have acquired a partner in Deutsche Lufthansa AG who will use this sustainable, alternative fuel. A declaration of

intent for the future production and acceptance of synthetic kerosene has already been signed, as we are convinced that synthetic kerosene is the most viable solution for CO₂-neutral flying.

With our KEROSyN100 project, we are looking to strengthen Germany as a technological and business location and to invest significantly and with complete conviction in research and production of these fuels.



Together with other companies, we want to establish and consolidate northern Germany as the country's leading region with the complete value chain of a green hydrogen economy.



H₂

Hydrogen – a new, important storage medium

Hydrogen is an important storage medium for the new energy world. By combining hydrogen with carbon dioxide, liquid fuels can be produced, or the hydrogen can be stored separately. This, along with the installation and subsequent operation of a 30-megawatt electrolysis plant at our site, are the key elements of the 'Reallabor Westküste 100' project, with the aim of producing green hydrogen. This is one of 20 projects that was selected as part of the nationwide 'Reallabore der Energiewende' (real-world laboratories for the energy revolution) competition. We are

preparing ourselves and the region for the future with this project. It provides the opportunity to gradually establish regional hydrogen production on an industrial scale.

This will make the west coast region and the Raffinerie Heide active players in the energy revolution. We have the opportunity to find answers to many issues that are important for a green future. The world is going to change over the next few decades and we want to actively shape these changes.



RAFFINERIE HEIDE

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