



## Wintershall Upstream: Focus on strategic partnerships and technological expertise

- Oil and gas production remain at record level
- Additional growth potential with DEA
- Selected joint ventures, innovative technologies, and responsible development and production

Wintershall, Germany's largest internationally active oil and gas producer, made significant improved results in 2017 compared with 2016. "We have significantly increased our economic performance and improved our profitability. We are clearly on course for growth," said CEO Mario Mehren. He added that the merger of Wintershall and DEA Deutsche Erdoel AG planned by BASF and LetterOne would also provide more momentum. "This is an exciting prospect because it offers additional perspectives for growth that suit Wintershall," said Mehren.

In the future, crude oil and natural gas will continue to contribute significantly toward covering the rising energy demand of a growing global population. This is why Wintershall is continuing to invest in the exploration and production of oil and gas, primarily in its core regions Europe, North Africa, Russia and South America. The company also aims to establish the Middle East as another core region in its portfolio, while its domestic production activities in Germany remain at the center of its innovation and research.

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“The results we have achieved in recent years show that focusing our company’s activities on core regions in combination with our proven partnerships and innovative technology is the right strategy,” explains Mario Mehren. “That applies, for example, to the Siberian permafrost, to the North Sea in Europe, as well as to the desert regions or the Tierra del Fuego in Argentina.” Technological expertise, operational excellence and longstanding cooperation in partnerships with national oil companies (NOCs) represent our strengths in the competition for global resources and are at the heart of Wintershall’s growth strategy, Mehren said.

### **Oil and gas production remains at record levels**

The company managed to maintain its crude oil and natural gas production at the previous year’s level (2016: 165 million barrels of oil equivalent). In the search for new oil and gas reservoirs, Wintershall completed a total of seven exploration and appraisal wells in 2017, of which three were successful. Our proven oil and gas reserves rose by 3 percent compared with the end of 2016 to 1,677 million barrels of oil equivalent (2016: 1,622 million boe). Wintershall replenished 133 percent of the volumes produced in 2017. The reserves-to-production ratio is around 10 years (2016: 10 years). This is based on Wintershall’s production in 2017 and the reserves at year-end. “We have increased our production by around 50 percent since 2011 alone, whereby we have not lived at the expense of the future,” said Mehren. This is because in the same period Wintershall also successfully increased its reserves by almost 50 percent.

Wintershall’s sales to third parties increased in 2017 by €476 million to €3,244 million over the previous year (2016: €2,768 million) as a result of higher prices and volumes. Volumes growth was mainly driven by the higher gas sales volumes. The price of one barrel of benchmark Brent crude oil averaged \$54 in 2017 (2016: \$44). Gas prices on the European spot markets rose by around 24 percent compared with the previous year.

Income from operations (EBIT) before special items increased by €276 million to €793 million in 2017 (2016: €517 million). This is primarily attributable to higher oil and gas prices and a higher earnings contribution from our share in the Yuzhno Russkoye natural gas field. Extensive measures to optimize exploration and technology projects as

well as the successful implementation of cost-cutting operational measures also had a positive effect. EBIT rose by €544 million to €1,043 million (2016: €499 million). This included special income from the reversal of impairments in Norway and the Netherlands as well as from the sale of shares in the Aguada Pichana concession in Argentina. This was partially offset by an impairment on the exploration potential in Norway. Net income after minority interests increased by €357 million to €719 million (2016: €362 million).

### **Wintershall DEA as a key player in Europe**

BASF and LetterOne signed a binding agreement at the end of September to merge their respective oil and gas business. The joint venture will trade as Wintershall DEA. “Wintershall DEA will form the leading independent European exploration and production company with international activities in selected core regions,” said Mario Mehren, who has been determined to be the Chairman of the Management Board and CEO of Wintershall DEA: “Thanks to technical expertise, German quality standards, and intelligent project solutions, Wintershall DEA will produce oil and gas for the future.” Crude oil and natural gas production at Wintershall and DEA amounted pro forma to a total of 210 million boe in 2017; that corresponds to a daily production volume of around 575,000 boe. Through this merger, BASF and LetterOne are laying the foundation for further profitable growth. BASF and LetterOne plan to float Wintershall DEA in the medium term through an initial public offering.

Closure of the transaction is anticipated in the first half of 2019, subject to the approvals from the merger control and foreign investment authorities, as well as a number of mining authorities and the German Federal Network Agency. Until then, Wintershall and DEA will continue as separate, independent companies. Starting in 2019, Wintershall and DEA, two companies that are steeped in tradition, will master the future together with demanding goals, because Wintershall DEA aims to raise its production to 750,000 to 800,000 boe per day between 2021 and 2023.

### **Secure supply from Russian sources**

Production in **Russia** and the continued field developments with Wintershall’s Gazprom partner in Western Siberia are important contributors to the company’s production growth. The natural gas

production from the **Yuzhno Russkoye** natural gas field in Western Siberia celebrated its tenth anniversary at the end of 2017. The field has been producing at a plateau of 25 billion cubic meters of natural gas per year since the middle of 2009. Wintershall has a 35% stake in the commercial success of the field via Severneftegazprom. This Western Siberian reservoir includes recoverable reserves of around 600 billion cubic meters of natural gas. Cumulative natural gas production currently amounts to more than 250 billion cubic meters. This roughly corresponds to the German natural gas consumption during the last three years. The natural gas volumes produced there are transported to Europe via, among others, the Nord Stream pipeline. Wintershall is therefore making a decisive contribution to securing the supply of natural gas in Europe.

Wintershall's second project, the development of section 1A of the technically very complex Achimov Formation in the Urengoy field, is also progressing successfully. Until November 2018, **Achimgaz**, a joint venture of the Gazprom subsidiary OOO Gazprom Dobycha Urengoi (50 percent) and the wholly-owned BASF subsidiary Wintershall (50 percent), had brought 99 wells into operation and also operates a large-scale facility for separating natural gas and condensate, which now has five processing lines. Up to 109 wells are planned in the coming years in order to raise production of the Achimgaz joint venture to an annual plateau level of more than 8 billion cubic meters. Wintershall and Gazprom have so far produced more than 34 billion cubic meters of natural gas and 15 million tons of condensate in this joint project. The government-approved development plan for the reservoir estimates that Achimgaz's total production will reach 283 billion cubic meters of natural gas and 83 million tons of condensate by 2049. The company celebrated its 15th anniversary in 2018.

Wintershall has also received a 25.01 percent stake in blocks **4 A and 5 A in the Achimov Formation** as a result of the asset swap with Gazprom in October 2015. The next milestone in the partnership between Gazprom and Wintershall was reached with the foundation of the Achim Development joint venture to develop blocks 4A and 5A. In April 2018, Achimgaz was commissioned as general contractor to build blocks 4A and 5A. According to the development plan, the two blocks contain hydrocarbon reserves amounting to 274 billion cubic meters of natural gas and 74 million tons of condensate. Wintershall and Gazprom will develop the reservoirs together.

**Wolgodeminoil**, Wintershall's joint venture with its Russian partner RITEK (a wholly-owned subsidiary of the Russian company LUKOIL) in southern Russia, celebrated its 25th anniversary in 2017. Today, the joint venture operates in three areas near Volgograd covering a surface area of more than 13,000 square kilometers, and is conducting extensive surveys there to find new reservoirs. Wolgodeminoil produces crude oil and natural gas from ten fields. Other fields are being developed or prepared for development. Around 4.8 million barrels of oil equivalent were produced in 2017. In August of 2018, the company reached a new production milestone in oil production with a total volume of 10 million tons.

### **Expansion of production activities in Norway**

A key component of Wintershall's long-term continuous growth in Norway is its partnership with the Equinor. Wintershall has taken over the operatorship of the Brage (35.2 percent) and Vega (55.6 percent) production fields from Equinor, and received shares in the Gjøa field (20 percent) as part of two extensive economic transactions. In conjunction with the agreement from 2015, Wintershall acquired shares in the Aasta Hansteen development project (24 percent), the Asterix discovery (19 percent) and the Polarled pipeline project (13.3 percent).

**Maria** is the first field that Wintershall has managed in Norway through all the stages of development – from discovery to production. The field went into production in December 2017, almost a year earlier than planned. As operator (50 percent), Wintershall and its partners received approval for the Plan for Development and Operation (PDO) in September 2015. The start of production, just two years after the official approval, for such a complex offshore project demonstrates Wintershall's expertise in the area of development projects. Accordingly, the Maria project will serve as a blueprint for future developments by Wintershall and the industry as a whole.

The Maria field uses two subsea templates, connected at a depth of 300 meters to the nearby Kristin, Heidrun and Åsgard B platforms, to produce oil. This unique development concept enables Wintershall to use the existing infrastructure for its own production, thus eliminating the need to invest in building a new platform. The Maria field has recoverable reserves of around 180 million boe.

For the **Nova (formerly Skarfjell)** field, after Maria the second self-operated development project operated by Wintershall (35 percent) in Norway, the company presented the PDO to the Norwegian Ministry for Petroleum and Energy in May 2018. It was then approved in October 2018. Together with its license partners, Wintershall plans to connect the Nova field to the Gjøa platform in order to make use of the existing infrastructure – as with the development concept for the Maria field. The field's recoverable reserves are put at around 80 million boe. The project is currently in the final execution phase.

In addition to self-operated fields, Wintershall focuses on projects that are operated with partners. With the planned start of production at the **Aasta Hansteen** field, Wintershall is reinforcing its position as one of the key players for complex major projects on the Norwegian continental shelf and as a gas exporter for Europe. After Knarr, Edvard Grieg, Ivar Aasen and Maria, Aasta Hansteen is the fifth development project in Norway since 2015 in which Wintershall is involved in the start of production. Together with the Brage, Gjøa and Vega shares it acquired from Equinor, Wintershall is thus increasing its daily production in Norway to well over 100,000 boe.

Through the planned merger with DEA, the future company Wintershall DEA aims to use its own self-operated fields like Nova (Wintershall) or Dvalin (DEA) to increase daily production in Norway to more than 200,000 boe in the next three to five years. That would amount to around a quarter of the total planned daily production worldwide of up to 800,000 boe.

In addition, Wintershall has strengthened its position in Norway through six new exploration licenses that were granted by the Norwegian Ministry for Petroleum and Energy in the 2017 APA licensing round. Wintershall will act as operator for three of the new licenses. All the license blocks are located in focus areas for Wintershall: in the Norwegian North Sea, the Norwegian Sea, and the Barents Sea. In addition, Wintershall plans to drill four new exploration wells on the Norwegian shelf in 2019. The company invests more than a third of its global exploration budget in Norway alone.

## Longstanding production in the southern North Sea

More than half the natural gas consumed in the EU today still comes from the countries bordering the North Sea: Norway, the Netherlands, Denmark, the UK, and Germany. Our very own North Sea is therefore an important and secure source for Europe's energy supply – up to and beyond 2020.

**Wintershall Noordzee**, a joint venture of Wintershall Nederland B.V. and Gazprom EP International B.V., is one of the major offshore natural gas producers in the Netherlands and operates more than 20 platforms in Dutch, Danish, German and British waters. To manage its operations efficiently, Wintershall Noordzee controls most of the platforms from Den Helder using a state-of-the-art radio monitoring system. Together with the Wingate platforms in the British North Sea, Ravn in the Danish North Sea and the German A6-A platform, 24 platforms and installations are monitored from the Center for Remote Controlled Operations (RCO). This is helping the company to improve its operational efficiency and effectiveness. The RCO Center is an important prerequisite for ensuring that small reservoirs in the southern part of the North Sea are able to produce gas efficiently. Wintershall Noordzee has been active in the region since 1965.

Wintershall Noordzee's natural gas production in the **Netherlands** will in future be extended to include crude oil production. A central element of this is the **Rembrandt** offshore discovery that is situated 120 kilometers north of Den Helder within exploration license F17a. The field, which is one of the largest finds in the Dutch part of the southern North Sea in recent years, is located adjacent to the Vermeer field. Wintershall Noordzee is current evaluating the potential development of these fields.

Wintershall Noordzee's smallest independent natural gas production platform is **L6-B**, an unmanned "minimum facility platform" that has been producing in the Dutch part of the North Sea since 2015. The use of the platform in the military restricted area approximately 85 kilometers north of Den Helder is made possible by its unique minimalist design – without a helicopter landing pad and accommodation – which enables an economical yield even in small reserves.

With the Wingate platform, Wintershall Noordzee commissioned its first natural gas production in the **British North Sea** in October 2011.

**Wingate** currently produces an overall volume (100 percent) of about two million cubic meters of natural gas per day. Wintershall Noordzee holds a 49.5 percent stake in the platform.

With the Ravn platform, Wintershall Noordzee (63.6 percent) is producing oil in the **Danish sector of the North Sea** for the first time as operator. The oil produced is transported via an underwater pipeline from an unmanned production platform to the manned A6-A processing platform run by Wintershall Noordzee and located 18 kilometers to the southwest in the German North Sea. From there it is transported to the F3-FB-1 production platform run by Neptune Energy on the Dutch continental shelf.

Wintershall Noordzee currently holds three additional licenses in the Danish North Sea, which were granted in the eighth licensing round at the start of 2016: Greater Ravn (Block 2/16), Elly/Luke (Block 3/16), and Torsk (Block 1/16). Wintershall is the operator for all three licenses.

### **Greater upstream commitment in the MENA region**

As a crude oil and natural gas company, Wintershall is increasingly active in the so-called MENA region (Middle East / North Africa) and intends to step up its activities there significantly. As well as the production in Libya, the company also intends to develop new natural gas and condensate reserves in the United Arab Emirates. "We have the know-how and the technology to be an attractive partner in this region," explains Martin Bachman, the Wintershall Executive Board member responsible for exploration and production in Europe and the Middle East.

In 2017, Wintershall successfully completed its second operated exploration well (SH-6) in the **Shuwaihat** field in **Abu Dhabi**. It achieved this significantly faster and at a lower cost than planned. The SH-6 well was spudded five kilometers offshore in the Arabian Gulf. In June 2012, the Abu Dhabi National Oil Company (ADNOC), Wintershall (operator) and OMV signed an agreement on the technical evaluation of Shuwaihat. Wintershall has been able to bring its technological expertise to bear in the project with its more than 40 years of experience in the safe development and production of sour gas deposits (H<sub>2</sub>S and CO<sub>2</sub>). "Wintershall's success is based on a combination of modern exploration techniques and innovative production processes to enhance the



recovery rate from complex reservoirs. We want to harness this expertise for the further development of technically demanding fields in the region,” explains Wintershall Executive Board member Martin Bachmann. In addition, Wintershall further expanded its partnership with ADNOC in November 2015 when it signed a Memorandum of Understanding aimed at conducting joint research into Enhanced Oil Recovery (EOR) methods.

In **Libya**, Wintershall operates eight oil fields in the onshore concessions 96 and 97 as the operator. Wintershall is currently negotiating the framework for future cooperation with NOC.

### **Well positioned in South America for new resources**

Wintershall has been producing hydrocarbons, primarily natural gas, for 40 years in **Argentina**. It is now the country’s fourth-largest gas producer. The company is active in the central Argentinean provinces of **Neuquén** and **Mendoza**, as well as in the south off the coast of **Tierra del Fuego**. The wholly owned subsidiary Wintershall Energía S.A currently holds working interests in 15 oil and gas fields and produces some 26 million barrels of oil equivalent (boe) annually.

Together with Total and Pan American South, in February 2016 Wintershall also successfully launched production in the new **Vega Pléyade** natural gas field in the Argentinean Sea off the coast of Tierra del Fuego. The Vega Pléyade platform has a daily production volume of 8.5 million cubic meters and will help to optimize supplies to the gas processing facilities already in operation in the region.

So far, Wintershall’s activities in Argentina have mostly been limited to production from conventional reservoirs. The company is now increasingly exploring the potential offered by unconventional reservoirs. Argentina has the second-largest shale gas deposits in the world. The “Vaca Muerta” Formation, which also lies in the Argentine province of Neuquén, is particularly important.

Wintershall has been active in the conventional production of natural gas and crude oil for more than 20 years in the province of Neuquén. So far, more than 350 wells have been spudded in the **Aguada Pichana Este** block (761 km<sup>2</sup>, Wintershall 27.27%, operator Total). Today natural gas is being produced from about 200 of these wells. In 2016, 7.4 million

standard cubic meters of natural gas were produced daily from the block. And in 2014 a shale gas pilot project was launched: The twelve planned horizontal wells, with deviations of 1,000 to 1,500 meters, are aimed at verifying the existence of natural gas in the Vaca Muerta formation. At the moment 13 of the project's wells are delivering very promising results.

The **San Roque** block (Wintershall 24.7%, operator Total 24.7%, YPF 34.1%, PAE 16.5%) extends over 1,040 square kilometers and lies north-east of Aguada Pichana. Up to 4.5 million cubic meters of gas are produced daily here from 50 wells.

In the south of Mendoza province, Wintershall Energía holds the exploration license as operator for block **CN-V** (50% Wintershall, 50% Geopark). Oil was found here in 2017 when an exploration well was being drilled.

Since 2014, Wintershall has held a stake in the **Aguada Federal** block in the Neuquén province and is the operator there. In December 2015 its share was increased from 50 to 90 percent. Together with the local state-owned energy company, Gas y Petróleo del Neuquén S.A. (GyP), Wintershall plans to survey the concession and investigate the commercial development potential. Promising rock can also be found here in the Vaca Muerta Formation. Following two vertical exploration wells, four horizontal wells were drilled during the pilot phase that each run horizontally over about 1,000 meters.

In addition, Wintershall has received a new block as operator (100%) with **Bandurria Norte** (new partitioning of the Bandurria concession). In the summer of 2017, Wintershall spudded the last of three planned pilot wells in the Vaca Muerta Formation. The wells in the 107-square-kilometer large block are targeting highly promising shale in the Vaca Muerta Formation.

Here the team was able to draw on its experience garnered from the previous project and thus complete the drilling campaign earlier and at lower costs. Both projects will be tested in 2018. "We have the technology and expertise to drill wells under demanding geological conditions and meet the highest HSE standards," said Mehren.

Wintershall is expanding its activities in the core region of South America and will in future also be active in **Brazil**, one of the world's most attractive growth regions for the oil and gas industry. The coastal region of Brazil is considered especially promising. In the spring of 2018, Wintershall received seven exploration licenses from the National Agency for Oil, Gas and Biofuels (Agência Nacional do Petróleo, Gas Natural e Biocombustíveis, ANP) and is acting as operator in four of the licenses. The licenses are located off the north and southeast coast of Brazil. The office in Rio de Janeiro will now develop the location in stages. The first exploration activities in the assigned blocks will take place in 2019.

### **Domestic production as a center for innovation**

In Germany, Wintershall has been making a key contribution to securing supplies for more than 85 years with its domestic production of crude oil and natural gas. "Due to the difficult geological conditions, production in Germany is technologically demanding and often only possible with considerable additional expenditure and special techniques," explains Wintershall CEO, Mario Mehren. In its home country, Wintershall is showing how oil and gas can be produced successfully under challenging conditions. At the same time, the oil and gas production in Germany forms the basis for continuous innovation that also sets standards internationally. "Our work here in Germany under very demanding geological and legal conditions also forms the basis for innovation and advanced technology with which we can prosper globally and forge international partnerships," says the Wintershall CEO.

Wintershall can also draw on its experience in developing and producing sour gas (H<sub>2</sub>S and CO<sub>2</sub>) and tight gas in Germany as part of its international collaborations. Tight gas is trapped in deep rock strata made of dense sandstone and can only be recovered using hydraulic fracturing. In the summer of 2016, the Bundestag passed a regulatory package for the future use of hydraulic fracturing which has meanwhile come into force. The new legal regulations considerably restrict the conditions for deploying hydraulic fracturing. For example, with the exception of four pure research projects, its use in unconventional reservoirs will generally be banned until 2021.

By contrast, fracking should be possible under strict conditions in conventional, already established natural gas production, including at

Wintershall's Düste Z1 project in **Barnstorf**, the headquarters for Wintershall's German activities. Here there have been plans to develop a possible tight gas reservoir since 2012. It is still undecided as to whether this natural gas field will be developed as a concrete project. "Wintershall will provide timely, open and transparent information on all steps," says Mario Dreier, Head of Wintershall's operated oil and natural gas production in Germany. Wintershall uses the tight gas technology from Germany not just for its domestic production but also in Russia, the Netherlands and Argentina.

One of the biggest crude oil fields on the Upper Rhine Plain is situated in **Landau in der Pfalz**. Wintershall has been producing oil at the site since the discovery of the field in 1955. In total, Wintershall produces up to 20,000 tons of oil annually in the Landau concession. Wintershall successfully completed a 3D seismic survey in Landau at the beginning of 2017. Geologists and reservoir engineers are currently exploring the potential for new drilling. Wintershall has also been producing crude oil in Aitingen, near Augsburg, for almost 40 years. A total of around 1.4 million tons of crude oil have been produced at the Bavarian site since production began. Overall, Wintershall produces more than 35,000 tons of crude oil per year in Aitingen.

The spirit of innovation at Wintershall is also associated with another operating site in Germany: **Emlichheim** in Lower Saxony. Wintershall has been producing crude oil at the German-Dutch border at a constant level for more than 70 years. That is unique worldwide. With the help of steam flooding we have maintained production at Emlichheim for triple the period originally planned. Wintershall currently produces about 150,000 tons of crude oil per year in Emlichheim. Production will continue in the coming decades. This long production period is due to another highly effective innovation: the combination of horizontal drilling with the steam flooding technique. In this process, the oil in the reservoir is heated with hot steam, which makes it thinner and easier to extract.

In September 2016, Wintershall launched twelve new wells in Emlichheim. These are connected to the well-known Bentheim Sandstone oil reservoir, which lies at a depth between 700 and 900 meters. Wintershall completed this drilling campaign in the summer of 2017. Eight of the twelve wells are used for crude oil production, and four wells are used for injecting hot steam into the reservoir.

As Emlichheim still has untapped reserves, Wintershall has been analyzing the oil field with a modern, high-resolution 3D seismic survey. The preliminary results of the cross-border measurement carried out in February 2018 will be available in early 2019.

Wintershall implements internationally recognized, high environmental standards and applies them on a daily basis. The **Mittelplate** offshore field, in which Wintershall and DEA Deutsche Erdoel AG (operator) each hold a 50 percent share, is one of the main pillars of crude oil production in Germany. More than 34 million tons of oil have already been recovered from the reservoir. To ensure that Mittelplate can also continue contributing to domestic production in the future, Wintershall and DEA already initiated a further drilling campaign in 2017 that will last until 2022.

#### **Wintershall. Shaping the future.**

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#### ***Forward-looking statements and forecasts***

*This press release contains forward-looking statements. These statements are based on current estimates and projections of the Executive Board and currently available information. The forward-looking statements should not be considered to be guarantees of future developments and results. Rather, the future developments and results are dependent on a variety of factors; they include various risks and uncertainties and are based on assumptions that may prove to be not applicable. We accept no obligation to update the forward-looking statements made in this press release.*