Combined management report as at December 31, 2018

This management report is a combined report on STEAG GmbH and the STEAG Group (STEAG GmbH and its subsidiaries). Business development at STEAG GmbH is reported in a separate chapter. The consolidated financial statements have been prepared in accordance with the International Financial Reporting Standards (IFRS) as applicable in the EU, while the individual financial statements have been drawn up in accordance with the provisions of the German Commercial Code (HGB), and the German legislation on limited liability companies (GmbH-Gesetz).

Basic information on the STEAG Group

Business activities and corporate structure

Business activities

The STEAG Group operates in Germany and internationally, providing integrated solutions and services for its customers in the areas of power and heat generation.

Its core competencies include the planning, construction and operation of large power plants and distributed facilities, asset-based power trading, and technical services related to energy generation. The Group's power and heat generating capacities are based on fossil fuels, special fuels and renewable energy sources.

Conventional energy generation

As one of Germany's largest electricity producers, as at December 31, 2018, the STEAG Group had total installed capacity of 7,700 megawatts (MW) electric, including around 5,500 MW in Germany.

In Germany, the STEAG Group operates large power plants at eight sites and has up to 200 distributed facilities to generate energy from renewable resources, to serve industry and to supply heat.

Internationally, the STEAG Group operates its own large power plants in Colombia, the Philippines and Turkey, based on a close and long-term partnerships. The power plant in

Iskenderun (Turkey) is the STEAG Group's largest power plant with installed capacity of 1,320 MW.

The transformation of the energy industry resulting from the socially and politically driven turnaround in energy policy in Germany is continuing. Like its peers throughout the energy sector, the STEAG Group has suffered a decline in earnings since 2011 as a result of the difficult market situation. Making the business in Germany viable for the future remains a key focus of the Group's strategic development. Through its “Dynamic” strategy project, the STEAG Group is systematically pursuing its strategic alignment as a national and international power and heat producer and service provider that is open to all technologies. The STEAG 2022 program defined distributed generating facilities, the service business and investment in selected foreign markets as further priorities. In addition, the STEAG Group is still focusing on continuous optimization of power plant processes and maximizing the flexibility of its power plants.

In June 2018, the German government established a Commission on Growth, Structural Change and Employment. Its objectives included drafting a recommendation on further reducing energy generation from lignite and hard coal in order to meet the CO_2 emission targets by 2030, and proposing a date for the final exit from coal-fired energy generation in Germany. Further, it was to propose short-term measures to enable the power sector to contribute to closing the gap in the German government's goal of reducing greenhouse gases by 40 percent by 2020 compared with 1990. The STEAG Group has already reduced its CO_2 emissions by 67 percent since 1990, including a reduction of 50 percent in the past two years alone.

In its concluding report on January 26, 2019, the Commission set out a range of proposals. The report contains few specific ideas on how to successively phase out coal-fired energy generation in Germany by 2038. In addition, it contains many approaches that would require far-reaching changes in the overall legal framework. The decisive factor will be the outcome of the political debate over the coming months.

There are still unanswered questions on how the energy system will work in the future and how reliable supply can be ensured in view of the planned shutdown of nuclear plants in Germany by 2022 if 12 GW capacity at coal-fired power plants is also taken offline by the same date.

The STEAG Group sees positive points in the Commission's concluding report, for example with regard to the reserve capacity at the power plants in the Saar region and the construction of new combined gas and steam plants at established locations. Moreover, one advantage from STEAG's perspective is the significance attached to the supply of heat.

The main risks are that operation of coal-fired power plants in Germany may not be permitted or possible for as long as originally planned. Whether the STEAG Group takes part in the proposed auction process to award bonuses for early shutdown of power plants will depend on the specific wording of the planned law on phasing out coal-fired energy generation.

The sharp rise in the price of CO_2 allowances to over € 25 per tonne at times in 2018 increased market pressure on the profitability of conventional power plants and has led to an ongoing review of the profitability of the STEAG Group’s domestic power plant capacity. The STEAG Group will only continue to operate power plants where lasting profitability is ensured.

Following the final shutdown of the Voerde A and B, Herne 3 and West 1/2 power plants in 2017, at the start of March 2018 the Board of Management of STEAG GmbH decided to register the Lünen 6 and 7 plants for final shutdown on March 2, 2019 with a statutory period of notice of 12 months. On August 6, 2018, notification was received from the transmission network operator Amprion GmbH and the Federal Network Agency that these blocks are not systemically relevant and could be taken out of service on March 2, 2019 or earlier. On the basis of a feasibility study, a decision was taken on August 30, 2018 that the Lünen 6 and 7 blocks with total generating capacity of 500 MW would cease operating on December 31, 2018.

With regard to the Weiher 3 and Bexbach blocks in the Saar region, which had been scheduled for provisional shutdown, Amprion GmbH decided in January 2017 that both blocks were still systemically relevant and the capacity should be upheld. A renewed application to take the Bexbach and Weiher blocks out service was submitted to Amprion GmbH and the Federal Network Agency on April 26, 2018. In August 2018, Amprion GmbH notified us that both blocks remained systemically relevant for a further 12 months until April 30, 2020 and could not be shut down.

In April 2018, STEAG reached agreement with RWE on taking over the 51 percent interest held by RWE Generation SE (RWE) in Bergkamen OHG effective January 1, 2019. STEAG GmbH and RWE Generation SE had joint stakes in the Bergkamen coal-fired power plant through Gemeinschaftskraftwerk Bergkamen A beschränkt haftende OHG.

STEAG GmbH and Siemens AG have recently agreed on turnkey construction and long-term maintenance of a state-of-the-art combined gas and steam power plant at the established site in Herne. Realization is still contingent, among other things, on approval by the relevant authorities. Investment in the mid triple-digit millions of euros should create a gas and steam power plant with capacity to generate over 600 MW electric power and around 400 MW steam. Total efficiency of the natural gas used to fuel the plant will be over 85 percent. The investment will be realized with subsidies under the German Co-generation Act (KWKG).

In addition, STEAG GmbH and partners are examining building a coke-oven gas power plant with up to 100 MW_{el} and 120 MW_{th} in Bottrop. This power plant would have an efficiency rating of over 42%. The plan is to set up a project company in 2019 to conclude all relevant contracts for this project and submit the application for the permitting procedure required by emissions protection legislation.

The municipal utility in Ulm is working on a project for a gas-fired power plant with up to 600 MW capacity in Leipheim. Project development, which commenced with a partner in 2016, is at an advanced stage. In June 2018, Germany’s the three transmission network providers announced an EU-wide tender for special network operation technology. This comprises 300 MW capacity for grid sector plus an additional 300 MW as a flexible reserve for specific lines. In October 2018, STEAG GmbH became a partner in the project company that submitted bids as part of the tender process in December 2018.

Renewable energies

Competition in the renewable energies sector, especially the market for wind energy projects and, above all, the development of advanced projects, has become far more intense as a consequence of the involvement of banks and insurance companies. In the light of this, the STEAG Group has adjusted its strategy. It identifies project opportunities at an early stage, drives them forward, and is prepared to take on further investors. In this way, additional capital can be obtained for growth while extending the portfolio.

The STEAG Group enters projects at an early stage of development so that it can develop sites, e.g. wind farms, either on its own or in collaboration with project developers. As at December 31, 2018 the STEAG Group had total installed capacity of around 800 MW based on renewables and distributed generating facilities.

In 2018, a new heating block with capacity of around 3.3 MW and a cooling facility came into service at Darmstadt Technical University. Construction of an air compressor at the Ford factory in Saarlouis is at an advanced stage. The first phase is already operating. In addition, the engine at the block heating plant in Fürstenwalde (2.0 $MW_{el/th}$) is being modernized. In Sömmerda, assembly work to replace an engine, also with 2.0 $MW_{el/th}$ capacity, was completed.

The 2.4 MW heating power plant at german paper solutions GmbH & Co. KG, a subsidiary of the leading wallpaper manufacturer Erfurt und Sohn KG, was acquired from WSW Energie & Wasser AG on January 2, 2018 and leased to Erfurt und Sohn KG. The energy concept provides for gas-fired operation only. This is currently being optimized by investing in the existing control technology and filter facilities.

Together with a local partner, the STEAG Group is developing and realizing a geothermal power plant with net capacity of up to 242 MW on the main Indonesian island of Java (Baturraden project). Planned capacity is currently 122 MW net. Since December 2017, two exploration wells have been drilled. They were expected to have a high temperature and high permeability. The presence of a geothermal resource was confirmed by temperature measurements in the first well. The rock samples show a composition of rock and minerals that are typical for a geothermal reservoir. However, the permeability of the rock formation was too low. The second drill was halted and the well secured because the rock was not of geothermal origin. The data collected from the drills is now being processed and integrated into the model used by the geological appraiser. Following evaluation of the findings, a concept for the next steps will be developed. There are not currently any plans to use these two wells for production purposes.

A competent trading partner

Based on many years of experience in the power, coal and CO_2 business, the STEAG Group has a broad portfolio of products and services, and extensive expertise in trading. This includes the procurement and marketing of electricity, fuel and CO_2 emission allowances, along with marketing of capacity and of heat and steam energy. In addition, the STEAG Group is one of Germany's leaders in the import and marketing of hard coal. It imports hard coal from the major producing nations for supply to STEAG power plants and third parties.

A professional service provider

Offering energy services is becoming increasingly important for the STEAG Group. Over the years the STEAG Group has accrued great expertise in modernizing energy generation plants and is now regarded as one of the leading providers of solutions for customized energy supply that is both environment-friendly and profitable.

As well as being a pioneer in efficient technologies for power generation from hard coal, which contribute to the conservation of resources, it is a specialist in optimization of the entire value chain associated with power plants. In Europe the STEAG Group also has a strong position in the re-use and marketing of waste materials from hard coal power plants. For example, fly ash from hard coal can be used for a wide range of applications in the building supplies sector. Photoment® is an innovative additive with photocatalytic effect that reduces nitrogen oxide levels in the air. It is used, for example, as an admixture in the production of concrete. Photoment® enables the STEAG Group to make a significant contribution to reducing nitrogen oxide levels in inner-city areas with high traffic density.

In the European Union, the STEAG Group is a leader in the generation of electricity and heat from mine gas and in Germany it is a leading generator of heat from geothermal energy. It is also one of the largest suppliers of district heating and a contractor and operator of biomass plants in Germany.

In the reporting period, technical connection of RZR Herten's new central energy plant 3 to the Ruhr district heating system was completed. Following start-up of this new plant, the supply of heat started at year end.

STEAG Fernwärme Essen GmbH & Co. KG continued the development work for the “east route” to connect areas in the south-east of the City of Essen that are suitable for district heating. There is potential for a new approx. 80 MW main supply line in this area.

The STEAG Group's competencies include engineering and operating solutions for every type of power generation. The engineers at the subsidiary STEAG Energy Services GmbH work internationally on projects in Brazil, Botswana, Romania, Turkey, Switzerland, the USA, and India. STEAG Energy Services (India) Pvt. Ltd. has around 1,500 employees, making it the foreign subsidiary with the largest workforce. In all, foreign power plants with around 7,300 MW capacity are operated on behalf of third parties. In addition, operational management support is provided for approximately 3,600 MW.

As of December 31, 2017, STEAG Energy Services GmbH acquired the “Krantz” business unit of Caverion GmbH, which specializes in heating, ventilation, cooling and clean room systems. A number of major supply projects were acquired during the year.

<u>A partner for Germany’s new energy policy</u>

As an active partner for Germany’s new energy policy, the STEAG Group stands for a holistic view of the transformation of the energy sector. Its aim is to make a substantial contribution to safe, environment-friendly and cost-effective energy supply.

Since the completion and commercial start-up of the six large-scale battery systems with total capacity of 90 MW in 2016, steadily rising interest in storage technology and, in particular, in investing in battery storage systems for primary control power has been registered in Germany. The STEAG Group has sufficient suitable locations for the construction of further battery storage facilities to provide primary control power. This could allow meaningful use of otherwise unused sites and, above all, operational, servicing, maintenance and marketing synergies in conjunction with the existing large-scale battery systems.

Alongside energy storage, for example, to compensate for fluctuations in grid voltage, efficient bundling and marketing of distributed facilities and systematic inclusion of the heating market in implementing the revised energy policy are key elements for its success. In Germany, the STEAG Group is focusing on these central issues.

Ownership structure

As at December 31, 2018, STEAG GmbH was wholly owned by KSBG Kommunale Beteiligungsgesellschaft GmbH & Co. KG (KSBG KG), Essen (Germany).

Integrated business model

STEAG GmbH, which is headquartered in Essen (Germany), is the parent company and head office of the STEAG Group. It holds the shares in the Group's subsidiaries, either directly or indirectly. STEAG GmbH is responsible for strategic and operational management of the STEAG Group's divisions, i.e. the Power division (comprising the Power Plants (generation and trading), District Heating, Power Minerals, Energy Services and Technical Service business units), and the Renewable Energies and Distributed Facilities division (New Energies, Waste to Energy and CHP Poland business units). This structure reflects the STEAG Group's integrated business model.

In the Power division, national and international projects are the basis for high-quality technical solutions for power plants. In the Power Plants business unit, the Trading & Optimization (T&O) department is responsible for marketing electricity, while the Generation department is responsible for operating the STEAG Group’s power plants.

In Germany, power generation is complemented by the activities of the District Heating business unit, which successfully markets the heat produced by co-generation plants.

The Power Minerals business unit markets waste materials from the German and foreign generating activities, mainly to the cement and construction industries.

For decades, STEAG engineers and technicians in the Energy Services business unit have been developing concepts for plants for conventional and renewable fuels. They design and build the plants and offer services and IT solutions to optimize them, both in Germany and internationally.

The Technical Service business unit pools the service expertise gained over decades, especially in power plant maintenance and services for electricity grids.

The second division is Renewable Energies and Distributed Facilities. Activities associated with distributed energy generation (based on renewable energy sources and industrial and/or municipal supply concepts) are bundled in this division. The New Energies business unit specializes in custom-tailored distributed energy solutions based on efficient and sustainable concepts. Alongside conventional energy sources, the range covers wind power, bioenergy, mine gas and geothermal energy. District heating and the use of mine gas to generate energy are areas where the division is also scoring successes in other countries such as Poland.

By acquiring the remaining shares in Thermische Abfallbehandlung Lauta GmbH & Co. oHG and the shares in IKW Rüdersdorf GmbH in 2017, the STEAG Group entered the waste incineration market. STEAG Waste to Energy GmbH is responsible for the strategic development of this business unit in Germany and internationally.

Using its technical expertise and experience, the STEAG Group has extended its long-standing activities through acquisitions and sees good growth prospects for CHP Poland.

Organizational changes

To optimize the present organizational structures, a further review was undertaken in 2018 with a view to dissolving or merging investments that are no longer required for the ongoing operational development of the STEAG Group because of their focus or minimal business activities. A review is undertaken at regular intervals in order to streamline corporate structures if continuing to operate the companies has no discernible benefit and results in ongoing external and internal expense for the STEAG Group.

A total of 21 companies were identified that could be merged as of January 1, 2019 or which have become part of the parent company as a result of acquisition of the remaining shares by the majority shareholder. These comprise both Group companies and investments under the control of STEAG that were not consolidated in the past on grounds of size and materiality.

Significant new contracts

The STEAG 2022 transformation program launched in 2016 includes divesting stakes in existing business activities to release funds to finance growth investments, in other words, for the necessary, business-oriented portfolio management. The divestment process launched in 2017 through competitive tenders continued in the reporting period.

In particular, biomass plants in Neuwied and Großaitingen and biogas plants in Karstädt, Kirchwalsede, Saxler and Tribsees were divested in order to streamline the biogas and biomass portfolio. Negotiations with potential investors on the sale of the biomass plant in Buchen are currently still ongoing. This transaction is not expected to be completed until 2019.

Ruhr Oel GmbH operates a refinery in Gelsenkirchen with sites in Horst and Scholven. Annual processing capacity is around 12 million tonnes of crude oil. The delivery, erection, start-up and maintenance of a new steam plant to secure future steam supply is to be realized on the basis of an engineering, procurement and construction (EPC) contract. Payments will be based on the stage of completion. An Early Works Agreement was signed between STEAG GmbH and Ruhr Oel GmbH in November 2018. Signature of the principal contract is scheduled for March 1, 2019.

On July 4, 2018, STEAG-EVN Walsum 10 Kraftwerksgesellschaft mbH and the Hitachi Group of Japan concluded a settlement with regard to the two outstanding appraisal proceedings. The arbitration tribunal established on the basis of the rules of the International Chamber of Commerce (ICC), Paris, was informed of the outcome and formally declared that the arbitration proceedings were closed. Hitachi also withdrew a case against STEAG GmbH which had been filed with the regional court in Essen. In addition, Hitachi will make various technical improvements to the power plant to improve its performance.

STEAG Energy Services GmbH is successful in international competition for energy services and the management of power plants. The “Krantz” business unit acquired as at December 31, 2017 gained a major order to supply aerosol and iodine filters for Westinghouse Electric Germany GmbH's Takahama 1&2 nuclear power plant. The Nuclear Technologies unit successfully acquired a new project. EWN Entsorgungswerk für Nuklearanlagen GmbH is planning to erect a new storage facility for transport and storage containers at its Lubmin location. STEAG Energy Services GmbH has been commissioned to act as general planner for the entire planning process and supervision of the subsequent construction phase.

The Swiss energy and infrastructure company BKW Energie AG is using the joint expertise of STEAG Energy Services GmbH and its project partner Kraftanlagen Heidelberg GmbH to plan the dismantling of the Mühleberg nuclear power plant near Berne. This power plant will be taken out of service in 2019 and will then be prepared for dismantling. The main task will be dismantling the reactor pressure vessel internals.

Alongside the major plant management projects for thermal power plants in India and Botswana, STEAG Energy Services GmbH has continued to step up is position in the management of wind power and hydroelectric facilities, photovoltaic installations and transmission lines on the Brazilian market. In the renewables sector alone, it is currently operating projects with total installed capacity of 2.8 GW in Brazil.

Strategy

The transformation of the German energy sector is continuing with the Commission on Growth, Structural Change and Employment, which was established in June 2018. Publication of the Commission’s recommendation in January 2019 marked the start of the political debate. For the affected (hard-coal) power plants, in particular, it raises complex and relevant strategic questions, for example with regard to participation in auctions and bidding strategy. The legislators are responsible for deciding on whether and how the Commission's recommendations will be implemented.

The upturn in electricity prices in 2018 could not mask the fact that the STEAG Group and its peers throughout the energy sector have been hit by a substantial drop in earnings in recent years as a result of the difficult market conditions. The STEAG Group introduced the STEAG 2022 program in response to the change in operating conditions. In a nutshell, the aim of this program is to raise the efficiency of the entire Group, optimize the portfolio and enter new growth areas. STEAG 2022 defines six strategic areas of focus, which have been reviewed, fleshed out and documented as part of the extensive “Dynamic” project, taking into account current national and international market and industry trends and the Group's core competencies.

1. Efficient operation of company assets in a dynamic market environment

Based on more than 80 years’ experience, the STEAG Group stands for efficient operation of its own assets. Facilities are constantly optimized in the face of constantly changing markets so that they can be operated competitively on these markets. One example of continuous, mutual learning is SEEPRO, the STEAG procurement development program that has already been successfully implemented for proactive, strategic procurement in Germany. The SEEPRO program is also being used at international locations in Turkey, Colombia and the Philippines.

2. Competitive advantage as an energy trader with its own generating base

STEAG's competence is that it can link its own generating capacity optimally with the requirements of the energy sector and energy trading. The key strategic factors are the procurement of fuels, marketing of power plants in Germany and abroad, and marketing of new facilities. STEAG's own trading platform is now up and running and has already been used to market the Süloglu wind farm in Turkey and the Crucea wind farm in Romania. In future, it will also be used for marketing for the Paipa and Iskenderun power plants.

3. A competent developer and operator of distributed energy supply facilities

The focus is on extending distributed energy generation in Germany and Poland, principally planning, implementation and operational management of custom-tailored distributed solutions for industry, but also the development of districts for the supply of heat, power and cooling. Examples of successful projects are mobile heat supply by STEAG New Energies GmbH in Dortmund-Bodelschwingh, using a high-pressure hot-water heating facility for hot water up to 180 °C and generating capacity of 9 MW, start-up of the new energy center at Darmstadt Technical University, with annual consumption of 54,000 MWh electricity, 62,000 MWh and 5,000 MWh cooling, and conversion of the Gröditz block heating facility to gas-powered engines. Another focus in Poland, a key European market, is the acquisition of district heating companies and networks by STEAG’s Polish subsidiary SFW Energia Sp. z.o.o., followed by optimization of the operating processes. Growth-oriented acquisitions play a significant role in this. The aim is to enter into partnerships, extend know-how through acquisitions, and successfully increase the established business such as the supply of heat to Opel in Gliwice.

4. Market position as a leading specialist in the decommissioning and dismantling of nuclear facilities

The market for services for the safety and decommissioning of nuclear facilities offers enormous potential in Germany and abroad. There is high demand for general contractors and specialists to plan and perform the decommissioning of nuclear facilities in Germany, Switzerland, Sweden, Japan, France and the UK. The STEAG Group is already well-positioned here in Germany, where it works, for example, for the nuclear power plant operator EnBW. To strengthen the Nuclear Technologies business unit, STEAG Energy Services GmbH acquired the “Krantz” business unit, a specialist in ventilation technology, which has now been successfully integrated into the STEAG Group. To further extend its competencies, STEAG is still pursuing selective entry into European and international growth markets.

5. Strengthening the international position as a successful competitor on the energy services market

For many years, STEAG Energy Services GmbH has had a very good position in the international services business. In the future, it will be focusing especially on utilizing sales structures in West and East Africa, South America and Eastern Europe to step up growth. Furthermore, services and licensing of digital products are being expanded. Decades of experience in the operation of its own plants enables the STEAG Group to offer competitive energy services. These mainly comprise plant monitoring, optimization, operational management and maintenance solutions based on extensive data and practical experience. Current examples are several maintenance and plant management contracts for wind farms and solar installations that have been signed with leading investors in Brazil. As a result, 150 STEAG Group employees are now responsible for total capacity of 2.8 GW in this country. Construction supervision and quality assurance for Stadtwerke Duisburg’s two-zone district heating storage facility in the Wanheim district is another example. More than 1,000 licenses for the digital products “EBSILON” (simulation program for thermodynamic cycles for power plant dimensioning), “SR::Suite” (collection of real data for analysis using EBSILON), “PIT Navigator” (autonomous data-based software to run process control technology on the basis of target/actual comparisons) and “SI/PAM” (plant operation system for IT-assisted maintenance of technical plants) have been sold to around 200 customers.

6. Expansion of development platforms and selective asset investments for generating projects national and international growth markets

Realizing energy infrastructure projects in collaboration with strong project and financing partners has always been part of STEAG's strategy. This type of partner model was used for the successful realization of the three foreign power plants, Termopaipa (Colombia), Iskenderun (Turkey) and Mindanao (Philippines). The Herne gas and steam generator project is being driven forward with the aim of supplying district heat via the Ruhr network. As well as the expected rise in the price of electricity resulting from the reduction in capacity, a key driver here is Germany's national co-generation legislation, which promotes the construction of highly efficient co-generation plans by subsidizing the power produced by such plants.

In addition, the ASEAN Power Development Platform (ADPD) in Asia is a joint venture with the Australian investment company Macquarie Corporate Holdings Pty. Limited. Joint decentralized project development with partners in specific regions is a model that the STEAG Group intends to use for foreign project development in the future. The STEAG Group has the option to acquire stake in the facilities once the projects have been commissioned.

Placing the business in Germany on a viable basis for the future

With a view to the focal areas outlined above, an important priority for the strategic development of the STEAG Group is making the German business viable for the future.

To this end, STEAG Group is still focusing on continuous optimization of power plant processes and maximizing the flexibility of its power plants. Additional competitive advantages could be achieved by using lower cost fuels such as special grades of coal.

The Walsum 10 power plant operated by the STEAG Group is one of the most efficient hard coal power plants and most of its output has been marketed on a secure basis through long-term supply agreements. The economically successful operation and marketing of thermal power plants is one the STEAG Group's key competencies. The Group is a leader in this field. The aim is to maintain this position, based on the conviction that thermal power will remain crucial for permanent and reliable energy supply in the future. The construction of highly efficient gas and steam power plants to integrate the heating market is also very important for the success of Germany's new energy policy. The STEAG Group is contributing to this through its gas and steam power plant project in Herne.

Efficient pooling and marketing of distributed facilities is one of the major challenges of the new energy policy. Virtual power plants are one possible solution, which the STEAG Group has been actively using for many years. Distributed generating facilities and facilities based on renewable energy resources are connected to conventional heat generating facilities and new technologies such as battery storage systems and managed jointly. Joint marketing with the STEAG Group’s conventional power plants enables the utilization of synergies.

The changes in the energy sector are also reflected in the increase in distributed energy supply, the desire for self-sufficiency combined with active management of energy costs and environmentally compatible local energy supply. Alongside local authorities that provide district heating, the main target group comprises industrial contractors for whom full, individual energy solutions are planned, financed and implemented. Based on its successes to date – examples are power and steam generation for Erfurt & Sohn KG and its subsidiary german paper solutions GmbH & Co. KG at its headquarters in Wuppertal/Schwelm, the erection of a central energy plant for Ford in Saarlouis (22 MW_{el}, 20 MW_{th}), the heating power plant at the Karlsberg brewery in Homburg (3.4 MW co-generation plant), and extension and modernization of the energy supply facilities at Darmstadt Technical University by STEAG New Energies GmbH – the STEAG Group will continue to market its outstanding expertise aggressively on the market in order to gain long-term industrial customers and extend its distributed energy business. The main focus is on gaining access to additional market potential for small facilities and new customer groups, and effective marketing with competitive cost structures.

Diversification and openness to technology are key elements in the future viability of the STEAG Group on the German energy market. The strategic re-entry into the growing waste-to-energy market through the successful acquisition and operation of two waste incineration facilities is a step towards this. The process of integration into the STEAG Group has been completed successfully and both facilities are making a stable contribution to earnings in a positive market environment.

Expansion of the service business

The STEAG Group is internationally successful in the area of energy services and the operation of energy generating facilities. Planning, building and operating power plants for third parties on the basis of conventional and renewable energy sources is the core business of STEAG Energy Services GmbH. The STEAG Group has long-standing expertise in power plants, which it markets successfully to third parties in Germany and, above all, in foreign markets such as India, Brazil and Botswana. The proportion of renewables in the portfolio is increasing successively. The international activities are to be stepped up in the next few years. A very good example is the contract acquired through an international process for draft planning of the ecological conversion and modernization of the Pljevla power plant in Montenegro, one of the most important energy projects in this Balkan state.

Decommissioning of nuclear facilities offers further significant potential for the future. STEAG Energy Services GmbH has offered planning, consulting and other services for many decades, along with the development and supply of systems and components for decommissioning nuclear facilities and nuclear waste processing. One example is the order acquired to plan and perform the dismantling of specific components in the reactor pressure vessel at Mühlebeg in Switzerland. Furthermore, the cooperation with nuclear technology specialist Kraftanlagen Heidelberg GmbH pools expertise and is a promising basis for national and international projects for the decommissioning of nuclear facilities. This cooperation and the acquisition of the “Krantz” business unit from Caverion Deutschland GmbH offer broadly based growth prospects in view of Germany’s decision to exit nuclear power - and on the international market.

As a service provider for industry and the construction sector, STEAG Power Minerals GmbH focuses on by-products from power plants, the production and supply of building materials, blasting agents and industrial minerals, and supplying secondary fuels and absorbents to power plants for flue gas scrubbing. The aim is to extend international business activities through partnerships in order to compensate for the decline in the fly ash business in Germany as a result of the shutdown of power plants.

Portfolio strategy and new projects

Investor interest in supply infrastructure, district heating and wind and solar installations is increasing due to the sound returns. As part of its active portfolio management, the STEAG Group constantly analyzes the financial and strategic attractiveness of its plants and investments. In response to the market environment, investments may be (partially) divested or partners may be found to provide new growth impetus for attractive facilities and investments. The aim is also to generate liquidity for investment in new projects, especially to diversify the business in Germany and to invest in growth markets.

Examples of active portfolio management in 2018 are the successful sale of a 49 percent minority stake in a portfolio of wind farms in France to a subsidiary of Allianz Global Investors GmbH and the successful sale of smaller, distributed biomass and biogas facilities in Germany.

The STEAG Group also sees growth potential on the Polish market for heat. The opportunity offered by a long-standing local presence and recognition as a specialist should be utilized to step up our engagement. The STEAG Group can use its expertise to optimize the existing supply of heating and thus leverage potential.

By developing projects in selected countries and markets, opportunities for growth can be utilized without being tied by specific technologies. Local networks, a high degree of flexibility and proximity to the market allow timely identification of attractive projects and anticipation of market changes, thus generating competitive advantages.

Geothermal energy and wind power are key elements to raise the proportion of renewable energies in the STEAG Group's generating portfolio. Therefore, a company in the STEAG Group is preparing to build a geothermal power plant in Indonesia with a local partner. The data from the two exploratory drills carried out since December 2017 are currently being processed in order to develop an appropriate drilling plan. A timely decision will then be taken on the next steps. As planned, the STEAG Group is engaged in talks to take on a further project partner.

At the same time, renewables – especially wind power – remain a future-oriented market. Therefore, the STEAG Group intends to continue to focus on renewables on the basis of a revised business model. The altered market and investment conditions are creating a seller's market, which the STEAG Group aims to exploit. In future investments, the focus will no longer be on long-term ownership of the assets. Instead, the plans provide for early involvement in development of projects, operational management, the use of energy-related know-how, and more flexible sale of wind farms during development or upon completion.

Strategic partnerships

The STEAG Group has made a name for itself through its competence, innovation and experience in the planning, construction and operation of power plants. Companies in Germany and beyond searching for suitable partners have put their trust in know-how from Essen for decades. Since large thermal power plants in Germany are coming under considerable economic pressure as a result of the expansion of renewable energies, international business is proving an important support for the STEAG Group.

Based on experience to date and with a view to international growth potential, the STEAG Group has set up the ASEAN Power Development Platform Joint Venture PTE. Ltd. (APDP) with Macquarie Corporate Holdings Pty Limited. The main purpose of this joint venture is to develop, realize and operate renewable energy projects in Southeast Asia, especially Indonesia, Malaysia, Vietnam and the Philippines. These emerging markets have a high or growing need for energy infrastructure and reliable energy supply. The STEAG Group is providing the technical know-how based on its long-standing experience. In addition, the STEAG Group can provide services for project development, realization and operational management and there is a possibility that it could take direct stakes in the projects to be realized.

Research and development

Research and development 2018

In 2018, STEAG GmbH continued to focus on application-related research and development rather than basic research. This applies both to central research and development at STEAG GmbH and to its subsidiaries.

In 2018, the intensive focus on driving forward digitalization continued in order to identify and continue to develop the STEAG Group's broadly based activities in this area. Dialog and close exchange on these topics is being stepped up further throughout the company.

The “Designetz” project launched in 2017 with a total of 46 partners as part of the Federal Economics Ministry's SINTEG initiative will shortly reach the half-way stage. An electrode boiler erected at the Fenne site as part of this project was officially opened on November 20, 2018. The flexibility provided by this boiler allows cost-effective generation of district heating, especially at times when electricity prices are negative.

The carbon capture facility at the Lünen location is to be relocated to Herne due to shutdown of the Lünen site. As part of the project to generate low-carbon district heating from hard coal, a platform is to be set up to test the synthesis of fuels - especially ethanol, kerosene or chemical products. At the same time, scope to produce hydrogen from excess power will be explored. The plan is to extend this platform and the related digitalization options with partners. The platform in Herne will allow the capture and re-use of CO_2 from the present coal-fired block and the planned new gas and steam block.

FlexiTes, a joint project to test extending the flexibility of thermal power stations, including in combination with storage capacity, in which the STEAG Group is involved, is entering the final phase. This joint project is funded by the Federal Ministry for Economic Affairs and Energy.

Tests are continuing on the impact of e-mobility, especially on distribution networks, as part of the work on STEAG's own electric cars. Integrating battery storage systems is becoming more important.

In the reporting period, work continued on long-term power storage, including possible use as an emergency power source. This includes research into the possibilities and limitations of thermal storage.

Within the scope of operational development, this year special attention is being paid to district heating activities and digitalization, especially load optimization to avoid peak loads and the use of building mass as a storage buffer. In addition, smart metering for district heating is being tested in connection with remote meter reading and remote operation.

Research and development at STEAG GmbH’s subsidiaries focused on specific aspects such as the situation caused by declining volumes of fly ash, the use of low-calorie gases for energy generation and thermal scrubbing of exhaust gases with the aid of micro gas turbines.

Economic report

Economic background

General economic development[1]

The cyclical expansion of the global economy continued in 2018, although momentum declined during the year. Global gross domestic product (GDP) increased by 4.3 percent, around the same level as in the prior year (4.2 percent). From the beginning of the year, the gap between the economic momentum in different countries widened. Following a weak start, the US economy grew strongly during the rest of the year. In particular, there was a rise in consumer spending, driven by a sharp rise in employment and faster pay rises. Further impetus came from tax cuts and higher state spending. However, the increased uncertainty caused by the trade dispute between the USA and China held back investment by US companies to some extent in the second half of the year. In Japan, the upswing was driven principally by domestic demand, especially investment to raise capacity in the light of high capacity utilization. Consumer spending was boosted by a substantial increase in real wages. By contrast, growth slowed in the euro zone. The key factors here were weaker exports as a result of slower global trade, while the pace of growth in domestic demand hardly changed. Despite the economic downturn, the increase in employment continued and unemployment declined.

Economic sentiment deteriorated considerably in the emerging markets. Alongside political uncertainty, the high level of US dollar debt in some countries is playing a key role in the appreciation of the currency. The reversal of capital flows has put pressure on some emerging market currencies, for example, the Turkish and Argentinian currencies. In addition, declining prices for industrial raw materials are affecting some exporting countries and point to a general reduction in the underlying global economic momentum. This is also

[1] The comments in this section are based principally on the economic reports published by the Kiel Institute for the World Economy (IFW) Kiel, no. 45 (2018/Q3) and no. 49 (2018/Q4) on the global economy, and no. 47 (2018/Q3) and no. 50 (2018/Q4) on the German economy, the weekly report by the German Institute for Economic Research (DIW) Berlin, no. 36/2018 and no. 50/2018, and the RWI - economic report 69 (2018) vols. 3 and 4, joint economic forecast fall 2018, Joint Economic Forecast Group of the Leibniz Institute for Economic Research (RWI), Essen (Germany).

visible in China, where the economic momentum slipped slightly during the year. High debt and the trade dispute with the USA dampened domestic demand slightly. Even so, the pace of growth in China only declined slightly (2018: 6.6 percent vs. 2017: 6.8 percent). All in all, the emerging markets posted growth of 5.76 percent, which was around the same level as in the previous year (5.6 percent).

The German economy is continuing to grow, albeit at a slower pace. Although spending by private households is still a strong growth driver, the growth rates are no longer as high as in the past three years, when the purchasing power of private households was boosted over long periods by falling energy prices. In addition, the German economy is dependent on exports, making it particularly susceptible to the risks arising from future global trade links. In many places, investment spending and therefore demand for German products is weakening. This is holding back capital spending in Germany. The slowing of the economy is also reflected on the labor market. Although employment is still rising, the pace of growth is dropping. The high capacity utilization is also reflected in rising wage pressure. Together with energy and food prices, this is pushing up inflation. All in all, the economic upswing is nevertheless continuing (1.5 percent in 2018 compared with 2.2 percent in 2017).

Energy consumption and energy generation[2]

In Germany, primary energy consumption fell by nearly 5 percent year-on-year in 2018 to the lowest level since the early 1970s, mainly due to the mild weather, rising energy prices and increased energy efficiency. Consumption of mineral oil decreased by 6 percent year-on-year while consumption of natural gas was 7 percent lower. An even greater drop in consumption of around 11 percent was registered for hard coal, principally due to lower generation of electricity and heat. By contrast, lignite consumption only declined slightly, by 2 percent. Use of nuclear power was almost unchanged, showing a drop of just 0.3 percent. Renewables increased by 2 percent year-on-year. Wind energy once again deserves to be highlighted, with grid feed up by 7 percent, while solar energy increased even faster – by 16 percent. Biomass was virtually unchanged and hydroelectric power dropped by 16 percent. In 2018, renewables accounted for 14 percent of energy consumption in Germany (prior year: 12.8 percent). Energy-driven CO_2 emissions were around 6 percent lower than in the prior year.

[2] All data on energy generation and consumption are provisional data from AG Energiebilanzen e.V. (as at December 2018)

Power consumption

In 2018, overall consumption of electricity was 598.9 TWh, just 0.2 TWh higher than in 2017. Gross power generated decreased by 0.7 percent (2018: 648.9 TWh vs. 2017: 653.7 TWh). The export surplus was 50 TWh (2017: 55.0 TWh).

Development of energy prices

A significant rise in prices on the international commodity markets was observed in 2018.

Oil prices have risen steadily since the North Sea oil grade Brent crude dropped to a low of US$ 27.88 per barrel (bbl) in 2016. The average price of Brent crude was US$ 71.57 per bbl in 2018, 30 percent higher than in 2017 (US$ 54.85 per bbl). The OPEC states and Russia were mainly responsible for this development. The aim of normalizing global reserves has now been achieved. Even an increase in fracking output in the USA could not hold back the rise in the oil price on a lasting basis. Having produced 9.353 million barrels a day (mbpd) in 2017, the USA produced 10.88 mbpd (+16 percent) in 2018.

The average price of natural gas in the Net Connect Germany market area increased by around 30 percent year-on-year in 2018. A significant rise in the price of natural gas was therefore registered, analogously to oil and coal. The increase in the average price in 2018 was the result of a very cold spell in February and March 2018, with a maximum price of € 71 per MWh. In addition, at times the gas price increased as a result of the higher price of crude oil (there are still some long-term agreements where the price is indexed to the oil price). Further, the use of natural gas was supported by the rising price of coal due to the ability to substitute coal-fired energy generation by gas-fired power stations.

Compared with 2017, the API#2, the price index for hard coal that is relevant for Europe, rose by nearly 9 percent. The average price for hard coal was US$ 84.49 per tonne in 2017. In 2018 the average price rose to US$ 91.91 per tonne. Most of this price rise was due to a sharp rise in demand in Asia as a result of the above-averagely hot summer.

Following several years of negotiation, at the end of February 2018 the reform of European emissions trading was adopted for the fourth trading period (2021-2030): The principal components of the reform aim to strengthen European emissions trading so that it regains its function as a key tool in EU climate protection policy. Therefore, the linear reduction factor, which reflects the annual reduction in the emissions ceiling, has been raised from 1.74 percent to 2.2 percent. In addition, the withdrawal rate for the market stability reserve will be increased from 12 percent to 24 percent in the period 2019 to 2024. This should bring a faster reduction in the present oversupply of allowances. The number of allowances in the market stability reserve will be limited to the previous year's auction volume and any allowances above this level will be permanently withdrawn. In addition, individual countries can voluntarily withdraw allowances from the auction total through additional national measures when facilities are decommissioned. As well as strengthening EU emissions trading, the aim is to maintain the competitiveness of energy-intensive industries in the EU. To achieve this, measures include a 3.5 percent increase in the proportion of allowances allocated free of charge. In addition, sectors affected by carbon leakage, i.e. a shortage of allowances, will receive up to 100 percent of CO_2 allowances free of charge. Following adoption of the reform, there was a sharp rise in prices in the remainder of the year, with the price even exceeding € 25 for a short time. The reasons for this included the security it gave new investors, which attracted speculators to the market. Demand for CO_2 allowances probably also increased because many industrial companies that had banked on CO_2 prices remaining low purchased allowances when they became aware of the sharp prices rise. The average price for 2018 was € 15.95 per tonne, around 173 percent higher than in 2017 (€ 5.85 per tonne).

Power prices continued to rise in 2018. EPEX spot, the average spot price on the electricity exchange, was € 44.53 per MWh (2017: € 34.05 per MWh), a significant year-on-year rise of more than 30 percent. The peak contract increased by more than 27 percent in 2018 to an annual average of € 48.23 per MwH (2017: € 37.91 MWh). The price rise was mainly driven by higher generating costs at coal and gas-fired power plants.

Earnings position

Performance in 2018

EBITDA and EBIT are used for internal management purposes and as indicators of the sustained earning power of the Group. EBITDA (earnings before interest, taxes, depreciation and amortization) and EBIT (earnings before interest and taxes) are both earnings parameters after adjustment for exceptional items (non-operating earnings).

The earnings from ordinary activities stated in income statement are adjusted for non-operating effects that are material for an assessment of the earnings position but not an indicator of the company's operational value added in order to calculate and disclose the underlying operating performance.

In the 2018 fiscal year, the STEAG Group's EBITDA and EBIT declined year-on-year in line with the budget.

STEAG Group: EBITDA and EBIT

in € million	**2018**	2017	Change in %
Sales	2,901.0	3,631.0	-20.1
EBITDA	307.1	352.8	-13.0
EBIT	160.6	198.3	-19.0
EBITDA margin in %	**10.6%**	**9.7%**	
EBIT margin in %	**5.5%**	**5.5%**	

Prior-year figures restated.

The prior-year figures were restated due to retrospective application of the new accounting standards IFRS 9 "Financial Instruments" and IFRS 15 "Revenues from Contracts with Customers".

EBIT was € 160.6 million, which exceeded the budget by € 17.6 million, and was also well above the 2017 figure of € 198.3 million. The EBIT margin (EBIT/sales) was unchanged year-on-year at 5.5 percent.

EBITDA was € 307.1 million, which was € 10.6 million above the budget, but below the 2017 figure of € 352.8 million. The EBITDA margin (EBITDA/sales) was considerably higher than in the prior year at 10.6 percent compared with 9.7 percent.

The main reason why EBIT and EBITDA exceeded the budget was the higher profit at the STEAG Group's power plants in Turkey.

The following reconciliation from earnings before the financial result and income taxes to EBIT and EBITDA shows that in 2018 exceptional items had a higher impact on these earnings parameters than in the prior year.

Reconciliation of EBIT and EBITDA for the STEAG Group

in € million	**2018**	2017
Earnings before the financial result and income taxes	134.9	182.0
Non-operating effects from the STEAG 2022 transformation program	-22.5	-16.5
Other non-operating impairment losses/reversal of impairment losses	40.4	28.9
Other effects	7.8	3.9
EBIT	160.6	198.3
Depreciation/amortization and impairment losses	187.7	193.6
Reversal of impairment losses	-0.8	-10.2
plus non-operating effects	-40.4	-28.9
EBITDA	307.1	352.8

Prior-year figures restated.

In 2018, the non-operating measures bundled in the STEAG 2022 transformation program mainly comprised the reversal of provisions for restructuring due to unplanned staff fluctuation and optimized realization of personnel measures.

Income statement for the STEAG Group

in € million	**2018**	**2017**
Sales	2,901.0	3,631.0
Change in inventories of finished goods	-7.4	-14.4
Other own work capitalized	1.4	1.8
Other operating income	877.4	549.0
Cost of materials	-2,144.0	-2,868.9
Personnel expenses	-349.6	-355.5
Depreciation/amortization and impairment losses	-187.7	-193.6
Other operating expenses	-956.2	-567.4
Earnings before the financial result and income taxes	**134.9**	**182.0**
Interest income	13.9	14.4
Interest expense	-82.1	-80.7
Result from investments recognized at equity	18.6	0.9
Other financial income	0.9	1.1
Financial result	**-48.7**	**-64.3**
Income before income taxes	**86.2**	**117.7**
Income taxes	-73.5	-58.1
Income after taxes	**12.7**	**59.6**
thereof attributable to		
Non-controlling interests	32.6	44.1
Shareholders of STEAG GmbH (net income)	-19.9	15.5

Prior-year figures restated.

External sales by division

in € million	**2018**	2017	Change in %
Power	2,567.1	3,274.8	-21.6
Renewable Energies and Distributed Facilities	333.9	356.2	-6.3
STEAG Group	**2,901.0**	**3,631.0**	**-20.1**

Prior-year figures restated.

Sales declined by 20.1 percent to € 2,901.0 million (prior year: € 3,631.0 million). The reduction in the volume of power marketed affected the year-on-year comparison. This was due, among other things, to the fact that as grid reserve facilities, the Bexbach and Weiher power plants will not generate marketable power in the mid term and the Herne 3 and West 1/2 power plants were taken out of service.

Total volume sales of energy from the Group's own facilities and those operated on behalf of its customers and from trading volumes purchased by the Power division declined by 38.3

percent year-on-year to 48,450.4 GWh_e[3] (prior year: 78,575 GWh_e). The clear decline in the volume of energy sold was mainly due to the shutdown of power plant capacity.

Volume sales of heat by the Renewable Energies and Distributed Facilities division decreased by 8.8 percent to 2,243 GWh_{th} (prior year: 2,460 GWh_{th}), while the volume of power sold dropped by 15.5 percent to 2,279 GWh_{el} (prior year: 2,696 GWh_{el}).

The decline in sales in the Renewable Energies and Distributed Facilities division was mainly due to a one-off effect at STEAG New Energies GmbH in 2017 from the sale of a plant constructed for Ford-Werke GmbH at its request.

The change in inventories of finished goods was higher at minus € 7.4 million (prior year: minus € 14.4 million) and other own work capitalized declined to € 1.4 million (prior year: € 1.8 million).

The other operating income increased by € 328.4 million, from € 549.0 million in 2017 to € 877.4 million in 2018.

The year-on-year increase was principally due to higher income from the valuation of derivatives (excluding interest rate derivatives), which totaled € 774.7 million (prior year: € 397.5 million). This was mainly due to higher market prices, coupled with fluctuations in trading volume, and is also reflected in higher expenses from the valuation of derivatives.

The € 724.9 million reduction in the cost of materials was mainly due to a drop in the volume of marketable power compared with the previous year. Please see the comments on sales.

Personnel expenses fell by € 5.9 million to € 349.6 million (prior year: € 355.5 million). In contrast, the average number of employees in the STEAG Group rose slightly from 6,183 to 6,291. This was principally due to the trend at foreign companies. In the reporting period, the balance of additions to and reversals of provisions for restructuring reduced personnel expenses by € 21.4 million. This resulted from changes in implementation of planned measures and higher staff turnover in the units affected. The decision on the systemic relevance of the Weiher and Bexbach power plants resulted in a partial reversal of personnel-related provisions for restructuring in the amount of € 27.9 million in 2017.

Depreciation, amortization and impairment losses totaled € 187.7 million (prior year: € 193.6 million) and included depreciation and amortization of property, plant and equipment, intangible assets and investment property amounting to € 142.4 million (prior year: € 148.4 million). In 2018, an impairment loss of € 25.6 million was recognized for the non-current

[3] Energy sales in GWh_e comprise both electric and thermal energy; thermal energy has been converted into the equivalent amount of electric power.

assets of the geothermal project in Indonesia. In addition, an impairment loss of € 9.8 million was recognized for the assets of a biomass facility in Poland.

The other operating expenses rose by € 388.8 million from € 567.4 million in the prior year to € 956.2 million. The year-on-year rise was principally due to higher expenses for the valuation of derivatives (excluding interest rate derivatives), which totaled € 745.4 million (prior year: € 363.3 million). This was mainly caused by higher market prices, together with fluctuations in trading volume, and is also reflected in high income from the valuation of derivatives. In addition, the prior-year figure was mainly affected by higher expenses for additions to provisions totaling € 19.5 million. In 2018, the addition was € 5.1 million.

Income before the financial result and income taxes fell by € 47.1 million year-on-year to € 134.9 million.

The interest income contained in the financial result decreased by € 0.5 million in 2018. The interest expense contained in the financial result increased by € 1.4 million in 2018.

The € 17.7 million rise in the result from investments recognized at equity also increased the financial result. The increase was mainly due to a one-off effect at a joint venture in the USA.

In addition, other financial income declined by € 0.2 million.

Income before income taxes fell from € 117.7 million to € 86.2 million.

Income tax expense increased by € 15.4 million, from € 58.1 million in 2017 to € 73.5 million in 2018. The increase in income tax expenses was mainly due to higher current taxes at the subsidiary Iskenderun Enerji Üretim ve Ticaret A.S. (Turkey) as pre-tax income was considerably higher than in the prior year. Further, the acquisition of the remaining shares in Thermische Abfallbehandlung Lauta GmbH & Co. oHG, Essen (Germany), resulted in one-time tax expense, which was reimbursed by the seller. The reimbursement was recognized in other operating income.

Financial position

Financial risk management

The central objectives of financial management are to safeguard the financial independence of the STEAG Group and limit refinancing risks.

STEAG GmbH manages borrowing, guarantees and sureties for Group companies centrally. It has flexible means of meeting capital requirements for day-to-day business, investment and the repayment of financial debt.

Another important objective is ensuring that the covenants relating to STEAG GmbH's bonded loans and EFET contracts are met. The main covenants set out in the agreements comprise financial indicators to be calculated on the basis of the consolidated financial statements of STEAG GmbH. These comprise the net debt ratio, which is the ratio of net debt to adjusted EBITDA[4], and covenants in the EFET contracts on tangible net worth[5] and/or the equity ratio.

Financing policy

STEAG GmbH provides funding for the companies in the STEAG Group and manages surplus liquidity on their behalf on market terms. To a limited extent, non-project companies also borrow funds directly from banks and invest surplus liquidity with banks. In these cases, borrowing is secured by STEAG GmbH. The projects companies' liability is secured through their cash flows and assets and financing is generally non-recourse. In these cases, no recourse to the parent company STEAG GmbH is possible. For example, non-recourse project financing has been agreed for the two foreign power plants in Mindanao and Termopaipa.

In Germany, cash pooling is managed by STEAG GmbH. To minimize external borrowing, surplus liquidity in Germany is placed in a cash pool at Group level which is used to optimize overall financing requirements in the Group.

[4] As defined in the bonded loan agreements.
[5] As defined in the EFET contracts.

Financing structure

The main components of financial assets are receivables from finance leases totaling € 246.4 million (prior year: € 296.2 million). Current receivables accounted for € 44.6 million of this amount (prior year: € 72.8 million).

As at December 31, 2018, the STEAG Group had financial liabilities of € 2,598.8 million (prior year: € 2,153.5 million) and cash and cash equivalents of € 495.4 million (prior year: € 449.2 million). In addition, € 70.1 million (prior year: € 160.1 million) were held in short-term deposits.

A considerable proportion of non-current financial liabilities amounting to € 1,287.4 million (prior year: € 1,220.6 million) comprises liabilities to banks, especially for the Walsum 10 power plant and project companies in Germany and abroad. In addition, liabilities include the bonded loan amounting to € 400.0 million taken out by STEAG GmbH in 2014, which was partly repaid in 2018. STEAG GmbH has also arranged other credit facilities with banks to increase the available liquidity. These currently exceed needs.

€ 45.0 million of the € 1,311.4 million (prior year: € 45.0 million of the € 932.9 million) in current financial liabilities relate to the liability to KSBG KG under the profit and loss transfer agreement, including the corresponding share of taxes.

The STEAG Group has no off-balance-sheet financing instruments that could have a material impact on its present or future earnings, assets and financial position.

The STEAG Group’s liquidity is secure.

Capital expenditure

The STEAG Group uses selective investment projects to maintain its good competitive position and expand into business activities and markets where it sees potential for sustained profitable growth and opportunities to generate appropriate returns. Every project undergoes detailed strategic and economic analyses, including sensitivity analyses and scenario analyses to reflect major risks. Projects have to meet business-specific and risk-adjusted minimum return requirements.

Capital expenditure and financial investments

in € million	2018	2017	Change in %
Power	102.0	83.1	22.7
Renewable Energies and Distributed Facilities	67.2	176.5	-61.9
Other	4.5	3.2	40.6
STEAG Group	**173.7**	**262.8**	**-33.9**

Capital expenditure totaled € 173.7 million (prior year: € 262.8 million). That was above depreciation, which amounted to € 142.4 million (prior year: € 148.4 million). In 2018 capital expenditure for property, plant and equipment increased by 49.2 percent to € 164.8 million (prior year: € 110.5 million).

The largest share of capital expenditure for property, plant and equipment (56.6 percent) was allocated to the Power division (€ 93.3 million; prior year: € 71.7 million). The biggest investment was for the DeNOx plant for the Iskenderun power plant in Turkey. A further 40.7 percent of capital expenditure for property, plant and equipment was allocated to the Renewable Energies and Distributed Facilities division (€ 67.1 million; prior year: € 34.6 million). The biggest single investment here is a geothermal project in Indonesia.

Regionally, investment in property, plant and equipment in the STEAG Group was focused mainly on Germany, which accounted for 49.9 percent (€ 82.2 million; prior year: € 63.2 million), Indonesia, which accounted for 21.0 percent (€ 2 34.0 million; prior year: € 12.1 million), and Turkey, which accounted for 13.1 percent (€ 21.6 million; prior year: € 24.4 million).

The Group has commitments of € 9.2 million (prior year: € 18.6 million) to purchase property, plant and equipment.

Financial investments amounted to € 8.9 million in 2018 (prior year: € 152.3 million) and mainly comprised an investment in the gas and steam-fired power plant at the Herne site.

In the previous year, the financial investments principally comprised the acquisition of shares in Thermische Abfallbehandlung Lauta GmbH & Co. oHG, Essen (Germany) and IKW Rüdersdorf GmbH, Essen (Germany). In addition, the “Krantz” business unit was acquired from Caverion Deutschland GmbH at the end of December 2017.

Cash flow

Cash flow statement for the STEAG Group (condensed version)

in € million	2018	2017
Cash flow from operating activities	121.8	246.1
Cash flow from investing activities	-21.3	-259.5
Cash flow from financing activities	-55.1	-61.0
Changes in exchange rates and other changes in the value of cash and cash equivalents	0.8	-13.3
Cash and cash equivalents as at December 31	495.4	449.2

The cash flow from operating activities was € 121.8 million, which was below the prior-year figure of € 246.1 million and mainly comprised the increase in income before the financial result and income taxes and changes in other assets and liabilities on the reporting date.

The cash outflow for investing activities was € 21.3 million, which was far lower than the outflow of € 259.5 million in the previous year. The considerable reduction compared the previous year was mainly caused by higher outflows for investment in shareholdings. By contrast, cash inflows from the divestment of shareholdings declined. Another effect relates to cash inflows from securities, deposits and loans. These comprise cash inflows from investment in time deposits.

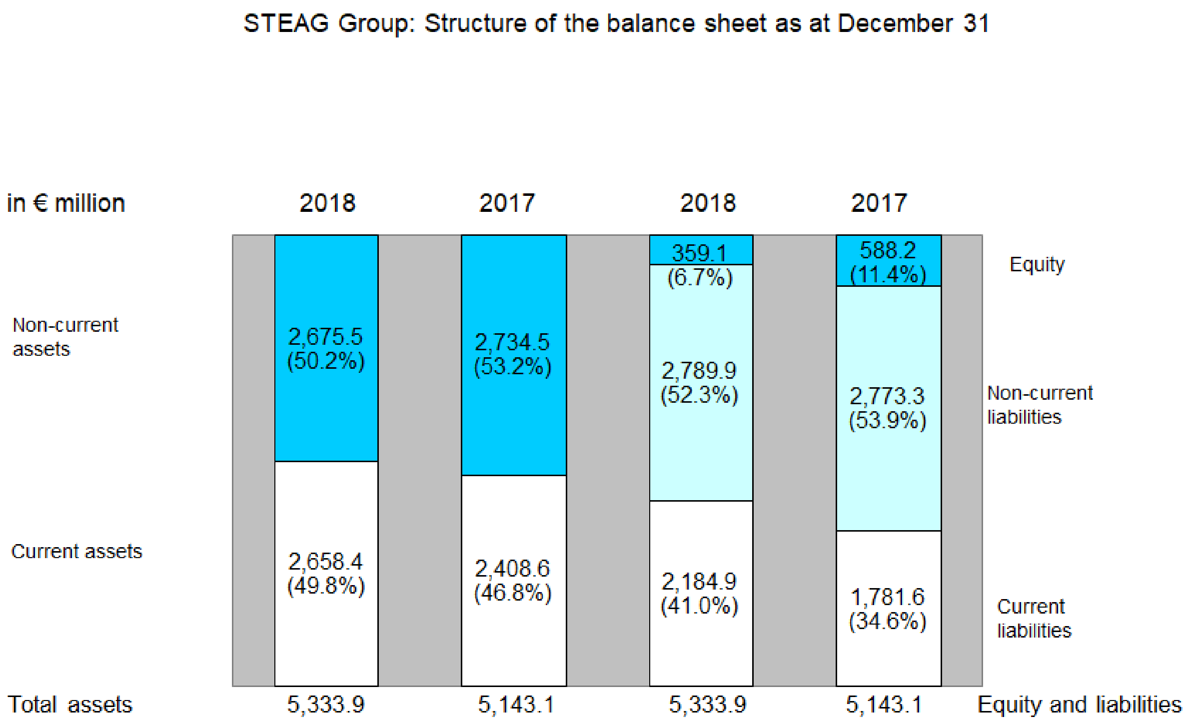
As at the reporting date, cash and cash equivalents totaling € 70.1 million (prior year: € 160.0 million) were held in short-term deposits. The year-on-year change of € 89.9 million is shown in the cash flow from investing activities in cash outflows relating to securities, deposits and loans.

The cash outflow for financing activities was € 55.1 million, which was less than the outflow of € 61.0 million in the previous year. In the reporting period, the cash inflow from the sale of shareholdings without loss of control was € 28.2 million and thus below the prior-year figure. Borrowing mainly comprised € 100.0 million acquisition financing at STEAG Waste to Energy GmbH.

The carrying amount of cash and cash equivalents pledged as collateral amounted to € 102.0 million (prior year: € 60.0 million).

Asset structure

Structure of the balance sheet



Total assets increased by € 190.8 million from € 5,143.1 million as at December 31, 2017 to € 5,333.9 million as at December 31, 2018.

Non-current assets decreased by € 59.0 million to € 2,675.5 million (prior year: € 2,734.5 million). The decline was mainly due to the fact that depreciation, amortization and impairment losses were higher than investment.

Investment was € 173.7 million (prior year: € 262.8 million), while depreciation and amortization of intangible assets, property, plant and equipment and investment property totaled € 142.4 million (prior year: € 148.4 million) and impairment losses were € 40.7 million (prior year: € 39.6 million). So far, investment in the geothermal project in Indonesia has totaled around € 74.8 million. Wells that cannot be used for production are presented in the consolidated financial statements as impairments. In the past financial year, impairment losses of € 25.6 million were recognized for this project. As at December 31, 2018, assets of € 49.2 million for the project were capitalized for this project. Further, there was a reversal of impairment losses on property, plant and equipment of € 0.2 million (prior year: € 8.2 million). The reversal of impairment losses in the previous year was mainly due to a reversal for one of the Group's biomass power plants.

Non-current assets accounted for 50.2 percent of total assets (prior year: 53.2 percent). Coverage of non-current assets by non-current capital was 117.7 percent (prior year: 122.9 percent).

Current assets totaled € 2,658.4 million (prior year: € 2,408.6 million), an increase of € 249.8 million compared with year-end 2017. The increase was due, on the one hand, to an increase of € 79.1 million in financial assets to € 1,104.8 million (prior year: € 1,025.7 million). A reduction in current securities and receivables from finance leases was more than offset by the essentially price-driven rise in receivables from derivatives.

Trade accounts receivables rose by € 69.6 million to € 612.2 million (prior year: € 542.6 million), principally due to the sharp rise in the price of CO_2 emission allowances, while inventories increased by € 55.6 million from € 223.5 million € 279.1 million.

Current assets exceeded current liabilities by 21.7 percent (prior year: 35.2 percent).

Equity contracted by € 229.1 million to € 359.1 million (prior year: € 588.2 million). The equity ratio therefore declined from 11.4 percent to 6.7 percent.

Non-current liabilities increased by € 16.6 million or 0.6 percent to € 2,789.9 million (prior year: € 2,773.3 million). The increase in liabilities from derivatives, which was driven mainly by prices, more than offset the reduction in provisions for restructuring due to changes in the STEAG 2022 restructuring program.

Current liabilities increased by € 403.3 million to € 2,184.9 million (prior year: € 1,781.6 million). Further, financial liabilities rose by € 378.5 million to € 1,311.4 million (prior year: € 932 million), mainly due to a price-driven increase in liabilities from derivatives. Similarly, other provisions were € 63.1 million higher at € 311.9 million (prior year: € 248.4 million), mainly due to a price-driven increase in liabilities from obligations to surrender CO_2 certificates.

Performance of STEAG GmbH

STEAG GmbH, which is headquartered in Essen (Germany), is the parent company of the STEAG Group. It holds the shares in the Group's subsidiaries, either directly or indirectly. STEAG GmbH is responsible for strategic and operational management of the Group's business activities. In addition, it is the largest single company in the Group with sales of € 1,657.1 million and total assets of € 3,266.6 million. The main subsidiaries in Germany are linked to it through control and profit and loss transfer agreements.

The annual financial statements of STEAG GmbH have been prepared in accordance with the accounting principles set out in the German Commercial Code (HGB), in the version applicable for these financial statements.

Following the divestment of STEAG Netz GmbH in 2017, the provisions of the German Energy Act (EnWG) were no longer applicable for STEAG GmbH and its subsidiaries in the reporting period.

Income statement for STEAG GmbH

in € million	**2018**	**2017**
Sales	1,657.1	2,322.7
Change in inventories, own work capitalized	4.8	0.1
Other operating income	47.7	105.7
Cost of materials	-1,547.2	-2,199.9
Personnel expenses	-148.5	-154.3
Depreciation/amortization and impairment losses	-26.0	-18.7
Other operating expenses	-124.6	-104.1
Financial result	184.0	95.9
Income taxes	-1.1	-0.8
Income after taxes	**46.2**	**46.6**
Other taxes	-1.2	-1.6
Profit and loss transfer	-45.0	-45.0
Net income	**0.0**	**0.0**

In 2018, STEAG GmbH's sales decreased by € 665.6 million year-on-year to € 1,657.1 million (prior year: € 2,322.7 million). The reduction was principally due to the drop in the supply of energy and other media, while sales from coal trading increased slightly.

In the reporting period sales mainly comprised € 1,192.5 million (prior year: € 1,885.9 million) from the supply of energy and other process media, € 282.5 million (prior year: € 271.0 million) from the supply of coal, revenues of € 7.4 million (prior year: € 7.8 million) from the gas business, and € 107.1 million (prior year: € 105.2 million) from operating and management fees. Revenues were generated with customers in Germany, other European countries and North and Latin America.

The other operating income of € 47.7 million (prior year: € 105.7 million) contains income of € 33.4 million (prior year: € 66.5 million) from the reversal of provisions, especially from the reversal of provisions for restructuring and the reassessment of dismantling obligations at the sites in the Saar region.

The year-on-year drop in the cost of materials basically mirrored the reduction in sales revenues.

Personnel expenses declined slightly year-on-year to € 148.5 million (prior year: € 154.3 million), in line with the number of employees.

The other operating expenses of € 124.6 million (prior year: € 104.1 million) mainly comprise other selling and administrative expenses, legal and consulting fees, and expenses for the establishment of provisions for risks relating to pending transactions. The other main items included in other operating expenses are rents and leases, trading-related transportation costs and insurance premiums. The increase in other operating expenses compared with the previous year resulted principally from the addition of provisions for impending losses from marketing of power in the future in connection with deliveries from the project company STEAG-EVN Walsum 10 Kraftwerksgesellschaft mbH.

The company's financial result was positive at € 184.0 million in the reporting period (prior year: € 95.9 million). This resulted principally from income from profit transfers of € 182.3 million (prior year: € 67.8 million) and income from investments of € 78.3 million (prior year: € 126.5 million). A counter-effect came from the negative interest result of minus € 90.3 million (prior year: minus € 77.9 million) – mainly due to interest on pension obligations and other non-current provisions and interest expense for non-current loans. The write-downs of financial assets and current loans totaling € 2.5 million (prior year: € 39.5 million) mainly comprised the impairment losses on loans and write-downs of shares in affiliated companies in Turkey.

The increase in income tax expense to € 1.1 million (prior year: € 0.8 million) was due to taxes outside Germany.

Income after income taxes and other taxes of € 45.0 million for the reporting period will be transferred to KSBG KG under the profit and loss transfer agreement.

Balance sheet for STEAG GmbH

Assets

in € million	Dec. 31, 2018	Dec. 31, 2017
Intangible assets	7.4	7.8
Property, plant and equipment	134.3	148.4
Financial assets	1,736.6	1,792.5
Non-current assets	**1,878.3**	**1,948.7**
Inventories	179.6	100.7
Receivables and other assets	894.2	836.4
Securities	-	19.7
Cash and cash equivalents	311.8	379.6
Current assets	**1,385.6**	**1,336.4**
Deferred items	**2.7**	**3.2**
Total assets	**3,266.6**	**3,288.3**

Equity and liabilities

in € million	Dec. 31, 2018	Dec. 31, 2017
Issued capital	128.0	128.0
Capital reserve	77.5	77.5
Profit reserves	272.8	272.8
Equity	**478.3**	**478.3**
Special items for investment subsidies for property, plant and equipment	-	0.1
Provisions	**1,112.3**	**992.7**
Liabilities	**1,670.6**	**1,810.7**
Deferred items	**5.4**	**6.5**
Total equity and liabilities	**3,266.6**	**3,288.3**

Total assets of STEAG GmbH contracted by € 21.7 million to € 3,266.6 million. Non-current assets declined by a total of € 70.4 million to € 1,878.3 million (prior year: € 1,948.7 million). Capital expenditure for intangible assets reported as non-current assets and for property, plant and equipment was € 9.0 million in the reporting period (prior year: € 9.2 million). Capital expenditure was below depreciation and amortization, which was € 12.6 million. The ratio of depreciation and amortization on property, plant and equipment and intangible assets reported in non-current assets (cumulative depreciation and amortization relative to the historical cost of acquisition or production) was 92.9 percent (prior year: 92.2 percent).

The € 55.9 million drop in financial assets to € 1,736.6 million (prior year: € 1,792.5 million) came from a decrease of € 80.9 million in shares in affiliated companies. By contrast, there was a rise of € 25.3 million in loans to affiliated companies. Interests in associated companies decreased, mainly because of the reduction of € 102.9 million in the capital reserve at STEAG Walsum 10 Kraftwerksbeteiligungsgesellchaft mbH. By contrast, the capital at STEAG Rüzgar Süloglu Enerji Yatirim Üretim ve Ticaret AS increased by € 20.0 million as a result of conversion of a loan. The principal changes in loans to affiliated companies were credit lines drawn by STEAG PE GmbH, STEAG Wast to Energy GmbH and Crucea Wind Farm S.A., and interest on the upstream loan to the shareholder KSBG KG.

Current assets rose by € 49.2 million to € 1,385.6 million (prior year: € 1,336.4 million). Inventories increased by € 78.9 million to € 179.6 million (prior year: € 100.7 million), mainly due to the net price- and volume-driven change in emission rights of € 46.8 million and a rise of € 14.3 million in coal inventories. Work in progress increased to € 4.6 million (prior year: € 0.0 million) as a result of a long-term order from a customer.

Receivables and other assets were € 57.8 million higher than in the previous year. This increase contains the increase of € 27.0 million in trade accounts receivable as of the reporting date. On the other side, the decrease in receivables from associates totaling € 20.9 million had an impact. This principally comprised receivables from loans and financial account agreements and receivables in connection with profit and loss transfer agreements. The other assets increased by € 50.5 million to € 71.8 million and mainly comprise security of € 64.8 million for power marketing, receivables from tax authorities amounting to € 3.4 million, and advance payments of € 1.7 million.

The investment fund units recognized in current assets in the prior year were sold at year end.

On the asset side of the balance sheet, there was only a slight reduction in deferred items to € 2.7 million (prior year: € 3.2 million).

There was no change in equity compared with the prior year. As a consequence of the change in total equity and liabilities, the equity ratio is now 14.6 percent (prior year: 14.5 percent). Equity coverage of non-current assets is 25.5 percent (prior year: 24.5 percent).

Provisions rose by € 119.6 million to € 1,112.3 million (prior year: € 992.7 million). The provisions for pensions and other post-employment benefits increased by € 54.9 million to € 610.2 million (prior year: € 555.3 million), mainly as a result of higher interest accruals and revised assumptions relating to the mortality of beneficiaries. Pension provisions accounted for 54.9 percent and thus the largest share of provisions (prior year: 55.9 percent). The other provisions increased by € 65.4 million compared with the prior year to € 494.2 million (prior year: € 428.8 million). The main reasons for this were the € 54.4 million increase in provisions for obligations to surrender emission allowances and the net increase of € 24.4 million in provisions to cover impending losses from future marketing of power from the Walsum 10 project. This was countered by net drop of € 35.4 million in restructuring provisions as a result of reversal and utilization.

Liabilities contracted by € 140.1 million to € 1,670.6 million (prior year: € 1,810.7 million). The change was mainly due to the reduction in liabilities to affiliated companies, which dropped by € 194.5 million to € 721.1 million (prior year: € 915.6 million). This was mainly due to lower liabilities from financial arrangements in connection with cash pooling activities. Liabilities for the profit and loss transfer agreement with KSBG KG were € 45.0 million, as in the prior year. In addition, there was a reduction in liabilities to banks (€ 404.4 million; prior year: € 415.7 million) and trade accounts payable (€ 275.6 million; prior year: € 288.5 million). This was countered by an increase in other liabilities (€ 221.3 million; prior year: € 146.5 million), principally as a result of the rise in collateral, liabilities to fiscal authorities and provisions for guaranteed dividends.

Non-financial performance indicators

Employees

Headcount

At the end of 2018, the STEAG Group had 6,575 employees. The proportion of female employees was 11 percent and the average age of the workforce was 43. Almost 48 percent were employed outside Germany.

The number of employees in the Group increased by 82 year-on-year, principally due to changes in the Power division (+84 employees): In the Energy Services business unit, the headcount increased by a total of 163 as a result of the deployment of more personnel in the plant management project at STEAG Energy Services (India) Pvt. Ltd. (+24 employees) and consolidation of the “Krantz” business unit (+224 employees) effective January 1, 2018. At the same time, this business unit reported a reduction in headcount at the subsidiaries STEAG Energy Services do Brasil Ltda. (-53 employees) and OPUS GmbH (-50 employees). In the Technical Service business unit, the headcount at Emtec GmbH was reduced by 39. The headcount in the Generation business unit declined by 32. This was mainly due to staff leaving ahead of the shutdown of the Lünen power plant, where vacancies were not filled.

Employees by division	Dec. 31, 2018	Dec. 31, 2017
Power	5,041	4,957
Renewable Energies and Distributed Facilities	1,048	1,052
Administration	486	484
STEAG Group	6,575	6,493

In 2018, the headcount reductions resulting from the decommissioning of power plants and from the STEAG 2022 transformation process were again achieved in a socially acceptable manner, i.e. without dismissals for business-related reasons, on the basis of the agreed redundancy plan for the Group and the framework for the reconciliation of interests.

Apprenticeships

In December 2018, 218 apprentices were being trained in various occupations, giving a training ratio of 3.5 percent for the STEAG Group and 11.8 percent for STEAG GmbH. The STEAG Group provides attractive, high-quality vocational training.

Personnel development

The STEAG Group invests in the development of its employees. It continuously offers both individual development measures and programs for specific target groups, backed up by permanent support.

The Group-wide General Management Program for staff with potential launched in 2017 was continued in 2018. This program supports 14 staff in their individual development towards leadership and management roles.

The STEAG Group is also continuing its internal Energy Development Program. A further 13 participants became the tenth group to embark on this program in 2018.

Both programs are embedded in the STEAG development landscape, which includes additional modules geared to individual development, management development, and continuing professional training and development.

Occupational health and safety and environmental protection

Preventing accidents at work and avoiding environmental and health risk are corporate goals. An end-to-end management system at all companies and at Group level allows uniform implementation of occupational safety measures and objectives. Target attainment by all organizational units is reviewed annually on the basis of this management system. In 2018, the accident indicator increased slightly to 3.5 accidents per 1 million working hours, having dropped to a historic low of 3.3 accidents per 1 million working hours in 2017.

The number of companies and sites that did not report any accidents increased further from 6 to 10 in 2018. They include the Mindanao power plant in the Philippines, where there has not been an accident for 12 years, and STEAG Fernwärme GmbH and Compania Electrica de Sochagota S.A.E.S.P - C.E.S, which have not had any accidents for three years.

Preventive occupational safety with the direct involvement of all employees was stepped up further in 2018 through “Vision ZERO”. Thorough accident analyses identified the main causes of accidents, as a basis for developing specific countermeasures. As a result, occupational accidents were reduced considerably in the second half of 2018.

To roll out the “Vision ZERO” campaign further in the coming years, in October 2018 STEAG signed a cooperation agreement with the employers’ liability insurance association for the raw materials and chemical industry on mutual support to improve occupational health and safety. The aim is to achieve a further improvement in occupational safety starting with the planning of work to be performed in order to prevent unsafe situations occurring.

In addition, preparatory work started to switch the certified occupational safety management situation to the first globally valid occupational protection management system in conformance with DIN ISO 45001. The Occupational Health and Safety Assessment Series (OHSAS 18001:2007), which has been used since 2008, will be phased out in the coming years.

The environmental protection management system and observance of the associated regulations were audited by the authorities through site inspections in accordance with the Industrial Emissions Directive and the Hazardous Incidents Ordinance. No shortcomings were identified at the power plants and heating power plants inspected.

Workplace health management

To improve the ability to combine working with caring for relatives, STEAG employees have had access to a special range of advisory and other services since the start of 2018. Employees at all of the Group's locations in Germany can use the family service run by an external provider. This provides support and advice on options for caring for relatives at home and partial or full-time institutional care.

Implementation of the legally required assessment of mental health risks and a voluntary stress analysis continued in 2018. This was accompanied by the establishment of steering committees and workshops with managers and members of the works council to ensure that the measures agreed on the basis of the findings are put into practice.

STEAG is stepping up its initiatives in collaboration with social security institutions to provide preventive health promotion measures geared to maintaining the long-term employability of staff. STEAG is cooperating with the German pension insurer Knappschaft-Bahn-See on a model project of the Federal Ministry of Labour and Social Affairs.

Company suggestion program

In 2018, STEAG employees submitted more than 957 suggestions on how to make operating processes and workflows more efficient, improve occupational and plant safety and save materials and energy. The suggestions evaluated in 2018 brought a net annual benefit of € 2.74 million for the STEAG Group. In addition, a suggested improvement at the Bergkamen power plant location received the “Ideas Award” in the category “Best Ideas from Production and Technology” presented by the Ideas Management Center at the German Institute for Ideas and Innovation Management.

Declaration on corporate governance with regard to gender quotas

The German law on equal participation of men and women in management positions in the public and private sectors came into effect on May 1, 2015. Based on the provisions of this law, the Supervisory Board and Board of Management have defined the following objectives:

The target for the percentage of women on the Supervisory Board of STEAG GmbH has been set at a minimum of 10 percent by spring 2022 at the latest.

The target number for the percentage of women on the Board of Management of STEAG GmbH has been set at 0 percent as at June 30, 2020.

For the first management level at STEAG GmbH, the target is 19-22 percent women by June 30, 2022 at the latest, while the target set for the second management level is 18-21 percent women.

Corporate governance

Corporate governance describes the framework and activities for responsible corporate management and oversight. Corporate governance measures in the STEAG Group range from complying with the legal requirements of relevance for the Group and with internal guidelines through performing agreements and contractual obligations to action on corporate responsibility and the duty of care set out in recognized international standards.

STEAG GmbH still applies most of the provisions of the current version of the German Corporate Governance Code, which provides a framework for strengthening the trust of investors, customers, business partners and employees around the world.

Within the STEAG Group, a large number of organizational units and companies work together to achieve these goals. Business operations will become even faster, more flexible and more diverse in the future, so there is a need for solid framework, especially in view of the rising regulatory challenges in many fields and many areas of business.

The compliance management system forms a central element in design of the necessary measures. The Group-wide responsibilities of the central departments charged with implementing these requirements cover risk prevention in areas ranging from white-collar crime to corporate responsibility issues such as observing the duty of care with respect to human rights and applying labor standards worldwide. The basis for this comprises the ten principles of the UN Global Compact, which the Group has been actively involved in since 2011. These principles are reflected in the practical business scenarios set out in STEAG Code of Conduct.

The corporate governance measures are implemented through a system of guidelines at all organizational units and locations. “Officers” named by the relevant management bodies support the central departments through regular reports, preventive measures, specialist knowledge and dealing with potential violations or suspicions of violation in order to reduce specific, jointly defined risks.

In the reporting period, the focus was on digitalization and interdisciplinary implementation. Alongside the priority given to technical value added, this included the related regulatory framework, for example, new developments in data protection and IT security.

The routine target-group-specific face-to-face training on compliance-related issues was continued. At foreign locations, in particular, the focus is on sharing information and intercultural learning because legal and social conditions may differ from the accepted standards in Germany. The findings are compiled in central compliance and corporate responsibility country reports, which provide valuable information on the respective countries and regions when embarking on new projects.

In addition, many countries introduced statutory changes in the area of compliance and corporate responsibility in 2018, some of which go beyond the (previous) standards. As well as compliance with the rules themselves, this affects agreements with business partners. As reported in previous years, the number of inquiries received from the financial sector about corporate governance requirements remains high.

In order to limit potential risks in advance, auditing of business partners at the earliest possible stage of a project has been stepped up. As well as identifying compliance and corporate responsibility risks, the aim is to establish a practice-oriented prevention strategy in agreement with the relevant business partners to ensure successful realization of promising and sustainable projects. Increased transparency with respect to business partners in areas such as prevention of money laundering and foreign trade law is also becoming more important in strengthening mutual trust. This is in line with the principles of good corporate governance within the meaning of the German Corporate Governance Code.

Events after the reporting period

No reportable events have occurred since the end of the reporting period.

Opportunity and risk report and forecast

Risk report

Risk strategy

Opportunities and risks constantly arise for the STEAG Group through its diverse business activities. Risk management is therefore a central element in the management of the company and is geared specifically to securing present and future potential for success, especially by avoiding and reducing risks and their consequences. Early identification and utilization of opportunities can heighten the success of the Group.

Due to its fields of activity, the STEAG Group is exposed to constantly changing political, social, demographic, legal and economic operating conditions. The resultant risks are addressed by monitoring and analyzing the entire operating environment and anticipating market developments. The findings are used to systematically develop STEAG's portfolio in accordance with the strategy for the Group.

Structure and organization of risk management

The basis of operational risk management in the STEAG Group is an internal, Group-wide management system that focuses equally on risks arising from potentially negative deviations from objectives and on positive deviations by highlighting opportunities.

The structure of the risk management is decentralized. The organizational units bear prime responsibility for the early identification of risks, estimating their implications, introducing suitable preventive and control measures and for the related internal communication of opportunities and risks. Risk officers in the organizational units are responsible for coordinating the relevant risk management activities. The Corporate Controlling department coordinates and oversees the processes and systems in the STEAG Group. It is the contact for all risk officers and is responsible for information, documentation and coordination at Group level. Further responsibilities include ongoing development of the methodology used by the risk management system. Alongside organizational measures and an internal control system, risk management is supported by the Audit department as a process-unrelated controlling and consulting body.

Risk management is a central element in controlling processes at all levels of the STEAG Group. That includes strategic and operational planning, preparations for investment decisions, monthly reporting and projections, and, from a certain level, immediate reporting of risks. The organizational units conduct an extensive annual inventory of opportunities and risks in connection with the mid-term planning process. All relevant factors are systematically identified and documented and the probability of the risks occurring and the potential damage are evaluated. All organizational units are required to provide details of action to be taken with regard to the opportunities and risks identified in the risk inventory and their implementation is monitored. The inventory, which looks at opportunities and risks over a short-term period of one year and a mid-term period of at least five years, is supplemented by monthly reports on changes in the opportunities and risk factors previously identified and newly identified opportunities and risks relating to the current year.

Overall risk assessment

Based on all identified risks (divided into strategic, operational, financial and other risks), as of the present date no risks to the position of the STEAG Group and STEAG GmbH as a going concern could be identified – either on a stand-alone basis or taking into account interdependencies between risks and measures that are planned or have already been initiated.

Strategic risks

Changes in the present regulatory framework could have a significant impact on planned investments and the earnings position of the STEAG Group. The Group's business activities are exposed to strong and dynamic competition which cause volume and price risks.

The altered market conditions in Germany will result in a decline in conventional power generating capacity on economic and environmental grounds. This is driven first and foremost by the promotion of renewable energies, which is unrelated to demand, and the priority given to feeding such power into the grid. The present subsidy regime is hampering market and systems integration of renewable energies and driving out highly efficient co-generation plants as well as lignite and hard coal power plants. In addition, there is a political debate about a fixed, government-imposed date for ending power generation from fossil fuels in Germany as a contribution to countering global climate change. The final outcome of this debate cannot be predicted at present.

Political risks in the countries where STEAG operates its foreign power plants (the Iskenderun, Mindanao and Termopaipa plants) are secured through investment guarantees from the Federal Republic of Germany. This means that loss of the STEAG Group's capital investment is essentially excluded.

Operational risks

Preventive risk management is particularly important in the power plant business on commercial, societal, political, technological and environmental grounds. In view of the high capital intensity and long-term nature of the business, careful analysis of market conditions and the general framework, astute management of the relevant risks through a balanced and systematic risk policy, the use of high-quality technology and acceptance of the facilities by the local community are central elements in proactive and sustained efforts to ensure that the company remains a going concern. Trustful, in other words, open and transparent, communication with customers, suppliers and neighbors, and operation of the plants in conformance with the highest environmental and safety standards are self-evident for the STEAG Group and form the basis for long-term success.

Policies that are agreed internally provide a framework for managing financial risks relating to trading prices (commodity prices, exchange rates) and the related counterparty default and liquidity risks. Corresponding indicators such as position limits, loss limits and value-at-risk are used to remain within the limits set. While price risks can be managed by the use of derivatives, with the aid of appropriate financial models, with regard to counterparty default risk the focus is on careful examination of the creditworthiness of contractual partners, the appropriateness of the underlying master agreements, and continuous monitoring of the associated credit lines. In the trading business, compliance with all relevant indicators is monitored by the trading back office. An extensive update of the risk framework for trading activities is carried out regularly and adjusted if necessary.

In connection with forward marketing, STEAG GmbH concludes trading agreements, some of which contain financial covenants that have to be fulfilled. These can result in claims for additional collateral. Not all agreed covenants were met as at December 31, 2018 (for example, tangible net worth). The total risk to STEAG GmbH of non-fulfillment of these covenants is, however, classified as low.

Risk factors for the STEAG Group arise from the regulatory framework for the operation of power plants. The environmental protection requirements for the operation of power plants are met in full. Further risks arise from the energy policy framework, which could affect the Group's business performance.

In view of their long-term nature and the large amount of capital involved, investment decisions involve complex and wide-ranging risks. Growth projects, in particular, are exposed to considerable uncertainty with regard to the estimates of future opportunities and risks due to the early project phase. At the same time, commercialization may depend on uncertain future events that can currently only be estimated on the basis of a sound opportunity/risk assessment (for example, the presence of a geothermal system that is suitable for commercialization in the case of the geothermal project in Indonesia). The STEAG Group has therefore defined structured responsibilities and approval procedures for the preparation and implementation of such decisions.

Regulatory changes also influence the STEAG Group’s business activities outside Germany. For example, intervention by the Romanian government in the market for renewable energy certificates has resulted in oversupply of such certificates. This negatively affects the ability to market the certificates for the Crucea wind farm.

The STEAG Group is continuously monitoring the current political and economic situation in Turkey. The significant depreciation of the Turkish lira since the start of the year contrasts with the positive development of consumer spending, foreign trade, industrial output and investment. The STEAG Group’s main involvement in Turkey is the Iskenderun hard coal power plant. The present power supply agreement for this plant ends in November 2019. Until then, operations are almost completely ring-fenced from political and currency-related developments. So far, isolated instances of delayed payment have been communicated transparently by the end-customer and settled promptly, so there is currently no reason to expect sustained negative financial impacts. Various concepts for follow-on marketing are currently being examined from the perspective of revenues and also with a view to the risks involved. Given its long-standing experience of the local market and local partners, the STEAG Group is confident that it can largely limit the negative effects of what it sees as a temporary crisis and can continue to operate as a reliable supply partner in this region.

Financial risks

The STEAG Group's earnings may be affected by fluctuations in interest rates and exchange rates.

Market interest rates affect refinancing costs and the assessment of the credit standing of the STEAG Group. This is also determined in part by the market situation for conventional power plants. The result could be a deterioration in the assessment of creditworthiness, resulting in higher borrowing costs.

The assessment of provisions is also affected by market interest rates. Declining interest rates increase the level of provisions and vice versa.

Foreign currency risks mainly relate to the procurement and pricing of fuel requirements. They are hedged using suitable financial instruments. For details of risk reporting on the use of financial instruments, please refer to the relevant section in the notes to the consolidated financial statements.

Planned dividend payments by the Group's foreign companies outside the eurozone are hedged in a structured manner against fluctuations in exchange rates. In addition, at Compañía Eléctrica de Sochagota S.A.E.S.P. (Colombia), costs in Colombian pesos are hedged against fluctuations in the exchange rate versus the US dollar.

Other risks

The STEAG Group is exposed to normal legal risks arising in the course of business from contractual relationships with customers and business partners, and technical risks relating to the operation of plants, especially large-scale plants. Adequate provisions are recognized for these risks in consultation with the relevant specialist departments.

In the past fiscal year, the legal dispute between STEAG-EVN Walsum 10 Kraftwerksgesellschaft mbH and the Hitachi Group in Japan was finally settled. The parties reached an out-of-court settlement.

Risks relating to STEAG GmbH

As the parent company of the STEAG Group, STEAG GmbH, which is based in Essen (Germany), has control and profit and loss transfer agreements with most subsidiaries in Germany. It therefore manages the Group's principal risks in Germany. The risk situation for the STEAG Group outlined above therefore essentially applies to STEAG GmbH as well.

Opportunity report

The STEAG Group has obtained a significant position in conventional power generation, both nationally and internationally, and has also positioned itself in renewables, distributed energy generation and related services. The aim now is to extend these activities.

Securing the future viability of the business operations in Germany is linked to a large extent to continuous optimization of the existing power plants to increase their technical and organizational flexibility. This will raise the cost-efficiency of the sites and maximize the lifecycle of the power plants – taking into account the altered and constantly changing framework in the context of the shift in German energy policy.

Further selected growth in Germany, especially in distributed energy generation, entering the area of waste incineration through the subsidiary STEAG Waste to Energy GmbH, and expansion of renewables are opening up new sources of revenue for the Group. Other opportunities are seen in the ongoing development of heat and power co-generation plants, district heating and, to some extent, in conventional energy generation in Germany.

The ongoing development and expansion of trading activities should stabilize and develop the domestic and foreign business and also drive forward growth.

The STEAG Group sees realization of high-earning foreign projects (conventional power plants and expansion of renewables) as a further opportunity to stabilize and improve its earnings position.

The Group's portfolio of material future opportunities also includes potential to increase services (in Germany and abroad, especially through STEAG Energy Services GmbH, STEAG Power Minerals GmbH, and STEAG Technischer Service GmbH).

The above market-related initiatives will be accompanied by optimization programs focusing on internal structures, processes and systems. In addition, in 2016 the STEAG 2022 program launched a transformation that made a considerable contribution to a sustained improvement in earnings in the reporting period and will continue to do so in the future. The focus is on extensive measures to leverage efficiency and on portfolio and growth initiatives.

Opportunities for STEAG GmbH

As the parent company of the STEAG Group, STEAG GmbH, which is based in Essen (Germany), has control and profit and loss transfer agreements with most subsidiaries in Germany. Therefore, STEAG GmbH has a significant role in identifying, evaluating and realizing material potential opportunities for the Group. The above presentation of the opportunities in the STEAG Group therefore also covers the main opportunities for STEAG GmbH.

Outlook

General economic development[6]

According to the German Bundesbank's latest forecast, the German economy will probably remain in an economic boom phase in the mid term. The slowdown in economic development in the third quarter of 2018 was due principally to temporary supply-side difficulties in the automotive industry and should be overcome quickly. However, capacity utilization is already high throughout the economy and will only increase slightly in the coming years. The demographic trend plays an important role here. On the supply side, it is holding back a further increase in employment and therefore contributing to increasing bottlenecks on the labor market. On the demand side, it is dampening demand for housing and companies' willingness to invest. Buoyant domestic demand despite this is due to consumer spending, which is supported not only by rising wages and salaries, but also by the highly expansionary fiscal policy, especially in 2019. Moreover, a relatively stable foreign trade environment can be assumed for the future. The current subdued export trend should pick up again in the mid term, with exports growing almost in parallel with the modest growth on the target markets. In view of this, a calendar-adjusted rise in real German GDP of 1.6 percent is expected for 2019.

The 2018/ 2019 annual report of the German Council of Economic Experts supports this assessment. It confirms that the German economy is in one of the longest upswings of the post-war era. That said, foreign trade conditions, temporary production-side problems and capacity bottlenecks point to a slower pace of growth. The German economy is facing major challenges. Nationally, the most important is demographic change, while internationally it is confronted with the uncertain future of the multilateral global economic system. The chief risks for economic development are an escalation of the trade dispute, a no-deal Brexit or a renewed flare-up of the euro crisis.

Development of the energy sector

The business performance of the STEAG Group is still dominated by the energy policy situation affecting both the German business and international business operations.

[6] See the German Bundesbank's monthly report of December 2018 and the 2018 annual report of the German Council of Economic Experts on the general economic development.

Rising power generation from renewable resources and the related overcapacity at conventional generating plants, which comprises many hours per year, are fueling a further squeeze-out of gas and hard coal power plants as a result of the pricing mechanism for wholesale power trading. In addition, margins at conventional power plants have come under further pressure as a result of the reform of the European Union emissions trading system for the 4th trading period, which was agreed in the first quarter. The reform focuses on a far faster reduction in surplus CO_2 allowances in the 2019-2023 period. Immediately after the decision, there was a (presumably sustained) hike in prices on the spot and futures markets (with fivefold year-on-year price rises at times). Analysts and traders only expect the present margin situation to alter in the mid term, as the planned shutdown of all nuclear power plants in Germany means that around 9 Gigawatts of base load capacity will be taken off the market by 2022. Until then, the profitability of highly flexible gas and hard coal power plants will remain under pressure. Nevertheless, hard coal power plants will remain vital for the foreseeable future to ensure reliability of supply and flexibly offset the fluctuating, weather-related supply of wind and solar power while keeping prices competitive internationally.

The recommendations put forward by the Commission on Growth, Structural Change and Employment on January 26, 2019 are not binding in the first phase, but the impact on the STEAG Group nevertheless has to be considered. It remains to be seen how the political debate and associated legislative process develop. They could bring both opportunities and risks for the STEAG Group in the future.

Internationally, the implications of the Paris Climate Agreement for the expansion and restructuring of the global energy system need to be monitored. This will depend on the extent to which the agreement is translated into national energy policy, especially in the G20 states, and on the extent to which the promises made about financing and technology transfer – especially for the energy-hungry developing countries and emerging markets – are kept. In this context, the UN Climate Change Conference in Katowice in December 2018 brought few new insights. The main outcome comprised compromises on transparency rules for the measurability and comparability of national efforts to reduce greenhouse gas emissions. There was no concrete operationalization of the goal of limiting global warming, which would have implications for the energy sector in particular.

Strategic and operational challenges

The energy market in Germany is still dominated by considerable upheaval. As a result of subsidized expansion of renewables and poor accountability for the system, installed generating capacity has increased strongly in recent years and there has been a sharp drop in electricity prices on the wholesale markets. On the other hand, political decisions have a major influence on the profitability of generating facilities. Since margins have been falling for years, the operation of many thermal power plants is no longer viable. Like its peers, the STEAG Group has been confronted by a significant drop in earnings as a result of the difficult market situation since 2011.

Through its “Dynamic” strategy project, the STEAG Group is systematically pursuing its strategic alignment as a national and international power and heat producer and service provider that is open to all technologies. The STEAG 2022 program, which was launched in 2016, gives clear priority to distributed generating facilities, the service business and investment in selected foreign markets. “Dynamic” fine-tunes the approaches by defining six strategic focuses.

There are still attractive growth opportunities for the STEAG Group. The Group has positioned itself in the competitive environment as a technology-friendly, innovative, agile and competitive supplier for the operation of energy generating facilities, energy services and trading in Germany and abroad. In future, attention needs to be focused less on long-term ownership of facilities and more on optimizing value followed by partial divestment of the assets. Services will become more important. Nevertheless, the Group will continue to drive forward its project business and undertake investments where the return on capital makes a lasting contribution to improving earnings.

Operating performance

Sales were € 2.9 billion in the reporting period, about 20.0 percent lower than in the prior year. The main influences were the (planned) reduction in marketable power capacity compared with 2017 (the systemically relevant status of the Bexbach and Weiher blocks meant that their power was no longer marketed by the company; final shutdown of the Herne 3 and West 1/2 generating blocks). EBIT (earnings before interest and taxes) was well above expectations. Nevertheless, this was below the prior-year result, which was dominated to a considerable extent by the proceeds from portfolio measures in the grid and district heating businesses and by valuation effects.

Sales are expected to increase to € 3.1 billion in 2019. The main driver is expected to be a price-related increase in sales from the operation and marketing of the domestic power plant portfolio and the anticipated rise in volume sales in the other business units.

In 2019, the STEAG Group expects earnings before interest and taxes to be around 37 percent above the prior-year level. However, it should be noted that the planned earnings will be influenced to a large extent by a valuation effect relating to the acquisition of the Bergkamen power plant and an effect relating to the reduction in STEAG’s stake in the Baturraden geothermal project in Indonesia. Excluding these effects, earnings will be around the prior-year level.

Investment of around € 230 million is budgeted for 2019. Around € 160 million of this amount has been earmarked for current and new growth projects. The drivers here include further acquisitions for the strategic expansion of energy-related services, especially in the area of nuclear technologies, and the planned gas and steam power plant in Herne to provide long-term security for the district heating activities in the Ruhr region. With regard to capital expenditures for existing infrastructure, completing construction of a flue gas denitrification (DeNOx) plant at the Iskenderun power plant in Turkey is the biggest individual project in the coming fiscal year. To meet legal requirements, it must be completed by mid-2019. Within the established business, selective investments will be channeled to raising the operating efficiency of power plants that already ensure high availability.

General information on expected developments

The STEAG Group assumes that the opportunities arising from its strategic focus and, in particular, the planned investment in growth areas will help it retain a successful position in the energy market. In parallel with this, the risks associated with the Group's business environment and activities are systematically identified, managed and monitored through its risk strategy.

Expected development of STEAG GmbH

The profit to be transferred by STEAG GmbH to its sole shareholder, KSBG Kommunale Beteiligungsgesellschaft GmbH & Co. KG, for fiscal 2019 is expected to stabilize at the same level as for fiscal 2018.

Essen, February 26, 2019
STEAG GmbH
Board of Management

Rumstadt Baumgärtner Dr. Cieslik Geißler

This report contains forward-looking statements based on the present expectations, assumptions and forecasts made by the Board of Management and the information available to it. These forward-looking statements do not constitute a guarantee of future developments and earnings expectations. Future performance and developments depend on a wide variety of factors which contain a number of risks and unforeseeable factors and are based on assumptions that may prove incorrect.