2.1 Strategy

RWE has an ambitious growth strategy, the cornerstones of which we presented to the public at the end of 2021. We have progressed faster than anticipated in implementing our strategy, despite the war in Ukraine and the energy crisis triggered by it. We had intended to almost double generation capacity in our green core business to 50 GW by building new wind and solar farms, battery storage systems, gas-fired power plants and electrolysers. It is already becoming apparent that we will exceed our target. An additional mainstay of our strategy is the accelerated exit from coal-fired generation – another area where we have stepped up the pace. We have reached an agreement with the German government and the state of North Rhine-Westphalia to stop producing power from lignite by as early as 2030 – eight years ahead of schedule. In so doing, we have laid the foundations to ensure our operations are in alignment with the 1.5-degree goal of the Paris Climate Conference.

Who we are and what we do. RWE is a leading international energy company headquartered in Essen, Germany, with a focus on electricity generation. Renewable energy sources such as wind and solar are an increasingly important part of our business. Our core activities also include gas and electricity storage, the hydrogen business, trading of energy- related commodities and innovative energy solutions for industrial customers. We generated revenues of €38.4 billion in fiscal 2022. Our key markets are Germany, the United Kingdom, the Netherlands and the USA. In the field of renewables, we are also active in a whole host of other countries, for example in Poland, Spain, Italy, France, Greece, Sweden, Denmark and Australia. We intend to further broaden the regional spread of our renewables business.

The energy triumvirate – carbon neutrality, security and affordability. Most industrialised countries where we do business have made their energy policies contingent on more ambitious climate protection targets. They want to minimise greenhouse gas emissions caused by the use of fossil fuels. Another objective is to ensure that energy supply is both reliable and affordable. This goal has become more of a focus for policymakers as a result of tensions on electricity and gas markets. Energy companies like RWE are faced with the following tasks:

- **Decarbonising electricity generation.** A core component of the energy transition is moving away from electricity generation from fossil fuels and embracing renewables. Coal and natural gas are finite resources, which when combusted lead to the emission of greenhouse gases. By contrast, wind, solar and hydro are not only energy sources that do not generate CO_2 emissions. They are also available in abundance, enabling renewables to provide the basis for a sustainable supply of electricity and heat. Another advantage is that these renewable power sources allow EU member states and the UK to reduce their dependency on fuel imports. Greater autonomy in this regard shields countries against the fallout from rising gas and coal prices on global markets and prevents axed imports from posing such a risk to security of supply.

- **Providing storage and environmentally friendly backup plants.** As energy supply relies increasingly on wind and solar farms, energy storage systems become ever more important for stabilising the power grids. Furthermore, we need more environmentally friendly, flexible generation assets, which can reliably produce electricity when there is no wind and no sunshine. Modern gas-fired power stations that can be retrofitted to run on carbon-neutral fuels will be well-positioned for this task. Hydrogen (H_2) is one such fuel. During combustion, it does not emit greenhouse gases and producing H_2 can also be carbon-free e. g. if it is made by electrolysis using renewable energy (green hydrogen). Moreover, there is a need to secure long-term, diversified supplies of natural gas and climate-friendly hydrogen.

- **Replacing fossil fuels with green power.** Reducing emissions only in the electricity sector is not enough to achieve climate neutrality. Action also needs to be taken in the manufacturing, heat and transportation sectors. At present, oil, coal and gas cover more than 70 % of European energy consumption. Switching to electricity produced with carbon-neutral methods – e. g. by using heat pumps instead of oil and gas heating systems – also enables emission reductions across sectors. Electrification is indispensable to achieving climate goals. This is why demand for electricity in our markets is expected to increase significantly.

- **Establishing the hydrogen economy.** The economy can only be completely decarbonised if solutions are also found for applications where direct electrification is not an option. Examples of this are the production of steel and fertilisers. In the near future, hydrogen produced using climate-neutral methods would be a solution. As previously explained, hydrogen can contribute to lowering greenhouse gas emissions in other ways on top of using it to generate electricity.

We're driving the energy transition. RWE is well positioned to contribute to transforming the energy sector and the broader economy in all of the areas discussed above. That is precisely what we are doing, by investing billions of euros in wind power, photovoltaics, battery storage and the hydrogen economy, phasing out coal-based generation, building environmentally friendly backup capacities and helping industrial customers to optimise energy consumption. In addition, we are working with policymakers to ensure security of supply. This task has become more important due to the war in Ukraine. For instance, we are organising imports of liquefied natural gas (LNG) to Germany and helping to develop the necessary LNG infrastructure. At the behest of the German government, we continue to operate two lignite units and our Emsland nuclear power station which had been scheduled to be decommissioned on 31 December 2022. We also temporarily put three lignite units which had been placed in reserve back online. However, the interim increase in coal-fired power generation does not change our long-term commitment to a fully decarbonised energy value chain.

At the Paris Climate Conference in 2015, the international community committed to limiting the increase in average global temperatures to well below two degrees Celsius compared to pre-industrial levels, preferably to 1.5 degrees Celsius. RWE aims to be carbon neutral by 2040 at the latest, ten years earlier than the EU. Not only does this apply to our own greenhouse gas emissions, it also covers the upstream and downstream value chain. At the end of 2020, the independent Science Based Targets initiative confirmed that the emission reductions we have planned for this decade are in line with the Paris target of 'significantly less than 2 degrees Celsius'. However, we are now working towards decreasing carbon emissions even further: in October 2022, we agreed with the German government and the state of North Rhine-Westphalia that we would phase out German lignite-fired power production by 2030, eight years ahead of the exit date established by law. In doing so, we will create the basis for complying with the 1.5-degree Celsius target.

Sustainability – at the heart of our corporate culture. Our mission statement 'Our energy for a sustainable life' expresses our purpose as a company and reaffirms our commitment to sustainability as a guiding principle of our actions. Although cutting greenhouse gas emissions may be a priority for us, it is not our only focus. Sustainability is measured in a myriad of ways. The expression is generally used within the context of environment, social and governance (ESG). Working together with internal and external experts, we defined the fields of action that are most significant for RWE and what we want to achieve in these areas. Further information on our ESG goals and the degree to which we have achieved them can be found on pages 78 et seqq. of this report.

Growing Green – our strategic roadmap to 2030. In November 2021, we informed the public about the strategy and goals for our business activities during the current decade at our Capital Market Day. Profitable growth in our green core business forms the centrepiece of our strategy, which is called 'Growing Green'. At the Capital Market Day, we announced our intention to invest approximately €50 billion in new wind farms, photovoltaic assets, battery storage, gas-fired power plants and electrolysers in the 10-year period from 2021 to the end of 2030. After deducting cash flows from divestments, this capital expenditure should total approximately €30 billion. We had thought that this would enable us to expand our green generation capacity (including battery storage systems and electrolysers) to 50 GW by 2030. This figure has been prorated, meaning that it reflects capacity based on our shareholding ratios. However, as the rollout of our growth strategy is coming along better than expected, we now expect investments to be higher. Our green capacity should significantly exceed 50 GW by 2030. This is in part attributable to the acquisition of US energy company Con Edison Clean Energy Businesses which has made us one of the leading solar power producers in the USA. This year, we will revise our strategy and update our growth targets. We want to present the results of this to the public at our next Capital Market Day, which has been scheduled for the fourth quarter of 2023.

Turning to the individual components of our growth programme:

- **Offshore Wind.** We are a world leader in offshore wind. At the end of 2022, we had a total pro-rata capacity of 3.3 GW in this field. We intend to increase this figure to 8 GW by 2030. We currently operate wind farms in the coastal waters of the United Kingdom, Germany, Belgium, Sweden and Denmark. Europe is our most important growth region, as exemplified by the British projects Sofia (1.4 GW) and Dogger Bank South (3 GW) as well as Thor (1 GW) located off the coast of Denmark. However, we are also looking to markets outside Europe: together with local partner companies, we are working on projects in the USA, Japan, Taiwan, South Korea and India. Last year, we secured areas for offshore wind farms in the New York Bight and off the Californian and the Dutch coasts through auctions. But we are seizing more than just geographic opportunities, as we tap into new technological options as well. In order to realise the full potential of offshore wind, we will also be expanding our generation portfolio in the future with the addition of floating wind turbines, which can be operated in deep waters. Together with our partners, we are exploring which types of floating foundation offer the best technical capabilities (see pages 27 et seq.).

- **Onshore Wind / Solar.** We also command a strong position in onshore wind. By the end of 2022, our prorated generation capacity totalled 8 GW, and we aim to increase it to 12 GW by 2030. In terms of solar, we are still in the starting phase: at the end of 2022 our PV portfolio had a capacity of 0.8 GW. Over the course of the current decade, we expect to add significantly more assets. Our original target was 8 GW. Through the acquisition of Con Edison Clean Energy Businesses, we will exceed this figure by a considerable margin. We are concentrating our onshore wind and solar efforts on North America, Europe and Australia, where we are looking to diversify geographically. Our main focus in terms of growth ventures is on countries and market segments harbouring potential for more than one technology, e. g. for photovoltaics plus wind energy and / or battery storage.

- **Battery storage.** The increased dependence on more variable energy sources such as wind and photovoltaics calls for more battery storage systems. RWE has been involved in the development, construction and operation of large-scale batteries for many years now. During this decade, we are targeting an installed capacity of 3 GW, compared to 274 MW (pro rata) at the end of 2022. In June 2022, we commissioned a key battery project in Hickory Park in the US state of Georgia, which consists of a 196 MW solar farm coupled to a 40 MW battery storage system. This combination enables electricity feed-ins into the local grid to be optimised, thereby improving the solar plant's yield. Future photovoltaic projects will largely follow this approach. We are also building battery storage to provide grid services. Two examples of this are the megabatteries with capacities of 72 MW and 45 MW, which we installed at our German power plant sites in Werne and Lingen (see page 40).

- **Flexible gas-fired power stations.** The supply gap caused by the coal phaseout cannot be plugged with battery storage solutions alone. We need to build flexible, low-carbon backup capacities that can balance out the fluctuations in power generation from solar and wind. Gas-fired power plants play a key role in this regard. We see a need for investments in Germany, where we plan to build gas-fired power stations with a total capacity of 3 GW. Potential sites include locations in North Rhine-Westphalia which have until now been utilised for coal-fired generation. That said, we will only make these investments if Germany provides the necessary incentives, which could include investment subsidies, for example. Furthermore, conditions must be in place for us to operate our gas-fired power stations using green hydrogen over the longer term. We are planning the necessary retrofits throughout Europe for existing assets and have already finalised the relevant concepts. In power plants that do not run on hydrogen, carbon dioxide could be separated from the flue gases and stored underground or used to produce plastics or fuels.

- **Hydrogen.** The hydrogen economy is a crucial part of the energy transition and a perfect complement to our business model. We want to be active along the entire value chain, from green electricity generation and hydrogen production through electrolysis to hydrogen trading and storage to the conclusion of individual supply agreements with major industrial customers. Our regional focus for these activities is on Germany, the Netherlands and the United Kingdom. In recent years, we have forged a range of partnerships with businesses and research institutes seeking to work closely with us to develop a comprehensive hydrogen infrastructure. Noteworthy projects include the German GET H2 and AquaVentus initiatives as well as Eemshydrogen in the Netherlands. More information on our hydrogen strategy and our major projects can be found at www.rwe.com/hydrogen.

Energy trading and customer solutions. In addition to power generation, we are also focused on energy trading as one of our core competencies. It is managed by the Group company RWE Supply & Trading, which acts as our interface to the energy markets. Around 200 specialists trade electricity, fuel and emission rights around the clock. In addition, RWE Supply & Trading markets the electricity from our power stations and procures the fuel and emission allowances required to produce it. The objective here is to limit price risks. On top of that, the company is in charge of the commercial optimisation of our power plant dispatch, with associated earnings going to our generation companies. Companies outside of the RWE Group can also benefit from the expertise of our trading subsidiary. They are offered a wide range of products and services, running the gamut from traditional energy supply contracts and comprehensive energy management solutions to sophisticated risk management concepts.

Above and beyond this, RWE Supply & Trading has established itself as an intermediary for pipeline gas and liquefied natural gas (LNG). Thus, in addition to meeting the needs of our Group companies, it also serves numerous industrial customers around the world. To this end, RWE Supply & Trading enters into long-term supply agreements with producers, organises gas transportation by booking pipelines, LNG tankers and regasification terminals as well as using storage facilities to time deliveries. In this regard, the greater the size and diversification of the procurement and supply portfolios, the better the chances to commercially optimise them. The gas business also opens up opportunities for hydrogen activities. For example, we are planning to build a second terminal next to the LNG terminal planned in Brunsbüttel – on which we report on page 41 – for importing green ammonia that could be used to generate hydrogen.

Socially acceptable phaseout of coal-fired generation. Our growth programme is flanked by an accelerated coal exit. In the United Kingdom and Germany, we already phased out hard-coal-fired power generation in 2019 and 2021, respectively. We are currently using hard coal in only our Dutch stations Amer 9 and Eemshaven, where biomass is co-fired. From 2025 and 2030, respectively, we will no longer be using hard coal in these plants. Conversely, the phaseout of lignite, which is produced and used to generate electricity in the Rhenish region to the west of Cologne, is significantly more complex for RWE due to the social ramifications. We agreed with the German government and the state of North Rhine-Westphalia that we would stop producing electricity from lignite in the Rhenish mining region as soon as 2030 for climate reasons. In contrast, policymakers ordered limited lifetime extensions for five of our lignite units, in order to ensure security of supply. These measures are deviations from the present exit roadmap and require plans to be substantially adjusted. First and foremost, this affects our employees. We will do all we can to avoid social hardship for our staff. As before, comprehensive compensatory measures will be taken for the affected individuals, such as a statutory adjustment allowance.

Our responsibility to the people in the Rhenish region does not end at the factory gates: despite the coal phaseout, we want to play our part in ensuring that the region remains structurally resilient and integrated within the energy sector, e. g. through the expansion of renewable energy. We intend to build no less than 500 MW of wind and solar capacities in the Rhenish region alone. Parts of the recultivated land are very well suited for these plans. Three RWE wind farms are already located there. We also want to continue using the power plant sites, for instance by operating new hydrogen-compatible gas-fired power stations. In addition, there are plans to build an innovation, technology and commercial park in and around Frimmersdorf and we are going to build a megabattery in Neurath. Furthermore, we are researching power-to-gas technology at the Niederaussem Innovation Centre. This is where, since 2013, we have used hydrogen and carbon dioxide made by electrolysis to produce fuel and feedstock for the chemical industry for research purposes.

Nuclear power – our focus is on safe and efficient dismantling. Germany's nuclear phaseout is a done deal. The German government may have delayed the decommissioning of the last three nuclear power stations from 31 December 2022 to 15 April 2023 to ensure security of supply in the winter of 2022 / 2023, however, this does not equate to a change in German energy policy. One of the three remaining German nuclear plants – the Emsland station near Lingen – is operated by RWE. We expect the unit to be finally decommissioned in April 2023. After that, our nuclear activities will be exclusively focused on the safe and efficient dismantling of decommissioned plants. Moreover, we are making efforts to ensure that the sites continue to be used for energy-related purposes. For example, we built a gas-fired plant in Biblis, which will help stabilise power grid frequency from 2023, thus making a contribution to security of supply.

RWE AG's management system. Our management system is geared towards sustainable growth that creates value and is based on RWE's strategic guidelines. To develop these guidelines, we analyse the market environment and competitiveness of our segment activities, identify growth potential and weigh up the opportunities and risks involved. Which projects are ultimately realised is at the discretion of the management of the Group company concerned. Larger investments are approved by the Executive Board of RWE AG. It also determines the allocation of capital, the long-term portfolio development and the type of financing.

To operationally manage the Group's activities, RWE AG deploys a groupwide planning and controlling system, which allows for timely, detailed insights into the current and prospective development of the company's assets, financial position and net earnings. Based on the targets set by the Executive Board and management's expectations regarding the development of the business, once a year we deliver our medium-term and long-term plans, in which we forecast the development of key financial indicators. The medium-term plan contains the budget figures for the following fiscal year and planned figures for the two years thereafter. The Executive Board submits the plan to the Supervisory Board, which reviews and approves it. During each fiscal year, we produce internal forecasts based on the budget. Members of the Executive Board of RWE AG and the main operating companies

meet regularly to analyse our financial position, net worth and earnings and update the forecasts. In the event that the forecast figures deviate significantly from the budget figures during a fiscal year, we analyse the underlying reasons and take countermeasures if necessary. We also immediately notify the capital market if published forecasts need to be modified.

Key earnings indicators. Among other things, we use key earnings indicators such as EBITDA, EBIT and net income to manage our business; however, we adjust these indicators by removing special items. EBITDA is defined as earnings before interest, taxes, depreciation and amortisation. In order to improve its explanatory power in relation to the development of ordinary activities, we carry out adjustments: non-operating or aperiodic effects are removed and presented in the non-operating result. This applies to capital gains or losses, temporary effects from the fair valuation of derivatives, goodwill impairments and other relevant special items. Subtracting operating depreciation and amortisation from adjusted EBITDA yields adjusted EBIT. Adjusted net income is another key operating indicator for us. We calculate it by correcting net income to exclude the non-operating result. Instead of the actual tax rate, which reflects one-off effects, we apply the budgeted rates of 15 % (until 2022) and 20 % (from 2023), which we have derived in consideration of the (expected) taxable earnings in our core market and the tax rates applicable there.

Expected minimum return on investments. We primarily use the internal rate of return (IRR) to evaluate the attractiveness of investment projects. We only undertake projects if – at the time of the investment decision – the expected IRR stays within a defined minimum threshold, which is determined using the weighted average cost of capital (WACC). The expected minimum returns are calculated by taking the WACC plus project-specific risk premiums, which usually range from 100 to 300 basis points, depending on the technology or region.

Safeguarding our financial strength and creditworthiness. The RWE Group's financial position is analysed using cash flows from operating activities, amongst other things. We also attach special importance to the development of free cash flow, which is derived by deducting capital expenditure from cash flows from operating activities and adding proceeds from divestments and asset disposals. Net cash / net debt is another indicator of RWE's financial strength: it is calculated by deducting provisions for pensions and similar obligations for the dismantling of renewables assets and for nuclear waste management to RWE's net financial position. Conversely, mining provisions, our 15 % stake in E.ON and compensation for the German lignite exit we expect to receive from the German government, are disregarded.

In managing our indebtedness, we orientate ourselves towards the leverage factor, i. e. the ratio of net debt to adjusted EBITDA in our core business. Given that we recorded negative net debt, i. e. net cash, as of 31 December 2022, the leverage factor was below zero. In future, we expect net debt to trend upward, as we will partially finance our growth investments with debt capital. Over the medium term, however the leverage factor should not exceed 3.0, as we wish to maintain our financial flexibility. For the period after 2025 we believe that an upper limit of 3.5 is acceptable, as the expansion of renewables will further enhance our financial stability.

2.2 Innovation

As an energy provider, we tend to be focused more on using rather than researching new technologies. Nevertheless, we do still contribute to innovation in our industry – whether it be by launching new projects, making funds available, creating the necessary infrastructure or offering our experience as a technology-forward company. This past year, we helped drive 188 research and development initiatives. Approximately 340 RWE employees made this happen, with many taking on these projects in addition to their normal workload. They all want to do their bit to make our energy supply more sustainable and – above all – climate friendly.

Solutions for a sustainable energy system. RWE is innovative in many ways. We are motivated both by a desire to remain competitive in an ever-changing environment as well as a passion to be a driving force of this change. Our innovation projects are dedicated to developing solutions that help us advance the utilisation of renewable energy, expand energy storage and become involved in large-scale hydrogen production. We also want to play a part in building a circular economy which puts carbon dioxide to the best ecological use.

Our 1,184 patents and patent applications, based on 233 inventions, are testimony to RWE's capability for innovation, as are our range of activities in the field of research and development (R&D). Last year, we drove forward 188 R&D projects, with around 340 RWE employees working full or part time on these endeavours. Such ventures often entail working with other companies or research institutions, allowing us to benefit from their valuable insights. This approach is also financially advantageous, as the costs are then shouldered by many stakeholders. Last year, our R&D spending amounted to €20 million (previous year: €22 million). On the following pages, we present a small selection of our current innovation projects. They illustrate the breadth and variety of the challenges we face in light of the energy transition and demonstrate the creativity with which we are tackling them.

German premiere for fully recyclable rotor blades. Wind energy is only truly renewable if the wind turbines themselves are also renewable. Nowadays, they are already up to 90% recyclable. The main sticking point to becoming fully recyclable are the rotor blades. The significant dynamic forces they must withstand during operation make composite materials indispensable. However, these materials are difficult to dismantle and therefore cannot be recycled. This is due to the glass fibre-reinforced epoxy resin that becomes completely solid once hardened. We are the first company in Germany to introduce fully recyclable rotor blades – namely at the new Kaskasi wind farm off the coast of Heligoland, which we completed in late 2022. Three of the wind farm's 38 wind turbines, supplied by Siemens Gamesa, feature rotor blades made from a new type of resin that allows for the different materials to be separated. Taking this approach largely preserves their properties, and allows for the individual materials to be reused once the rotor blade has reached the end of its life. We are now testing the new rotor blades under real-world conditions. If they prove effective, we also intend to use them in future wind farms.

Revolutionising offshore wind with floating wind turbines. Most offshore wind farms have one thing in common: they are located in shallow coastal waters with the turbines firmly anchored to the seabed. For a long time, areas with waters that exceeded 60 metres in depth were off-limits to offshore wind farms due to the limitations of fixed-bottom foundations. But the tide is turning – thanks to the development of floating turbines, which are mounted on buoyant platforms made of steel or concrete and secured to the seabed using mooring systems. These units unlock the possibility of generating power in deeper, hitherto untapped waters. RWE has taken a leading role in developing this new market. We are currently involved in demonstration projects, researching the pros and cons of various floating foundations. We reported on a number of these plans, e.g. the TetraSpar Demonstrator and DemoSATH projects, in last year's Annual Report on page 30 et seq. Our TetraSpar Demonstrator, located off the coast of Norway, went online in 2021. We are currently assessing whether its behaviour under real-world conditions aligns with our assumptions from prior calculations and tests.

Our DemoSATH project, which is being delivered in partnership with Saitec Offshore Technologies, reached an important milestone in 2022: the catamaran-like floating platform, which has been equipped with a 2 MW turbine, was launched into the water in the port of Bilbao, northern Spain. In a next step scheduled for this year, it will be attached to a preinstalled single-point mooring system in the Bay of Biscay. This will allow the floating turbine to adjust its position depending on the direction of the wind, ocean currents and waves. The system has already been used to great success in oil and gas extraction. We will now be using it – on a much greater scale – for offshore wind, allowing us to lay the groundwork to scale up the technology even further.

RWE sounds out potential for offshore photovoltaics. As we are already using wind turbines at sea, why can't we operate offshore solar farms? Well, we believe we can! Our first floating solar farm became operational in the middle of 2022. With 13,400 modules and a total capacity of 6.1 MW, it is located on a lake near our Amer power station in the Netherlands. Now we want to show that we can even generate solar power in more challenging maritime conditions. We see significant potential, particularly for areas with high solar irradiation, such as the Mediterranean Sea, as the technology offers a solution to the growing issue of land shortages. We also believe combining the technology with offshore wind farms will prove particularly beneficial as the surface of the sea can be used more efficiently for electricity generation. This will also unlock potential synergies in terms of plant construction and maintenance at sea.

RWE has joined forces with leading technology partners through pilot projects aimed at driving the commercialisation of offshore photovoltaics. We are participating in the EU-funded research initiative EU-SCORES, which is testing a 3 MW offshore photovoltaic plant from the company Oceans of Energy, for example. It is located off the coast of Belgium and should start producing electricity this year. We are also collaborating on a second project with Dutch-Norwegian start-up SolarDuck: our partner will be commissioning a 0.5 MW pilot plant in the North Sea. Photovoltaics at sea call for wind- and wave-proof technology that can withstand being exposed to seawater. These two pilot projects will give us valuable practical insights that could help us drive the commercialisation of offshore photovoltaics.

Hydrogen – an indispensable part of the energy transition. Hydrogen is an all-rounder when it comes to the energy transition. It can be produced climate-neutrally, for example using electrolysis with electricity from renewable sources, and it can also be re-electrified if necessary. This makes it an ideal storage medium for wind and solar power. It also acts as an excellent fossil fuel substitute for industrial processes that cannot be decarbonised such as steel or fertiliser manufacturing, for example. It is no wonder that developing the hydrogen economy is such a high political priority. And RWE has taken a leading role in this regard. Together with our partners, we are currently working on around 30 hydrogen projects centred on Germany, the Netherlands and the UK. We report on our most important projects at www.rwe.com/hydrogen.

First steps towards large-scale hydrogen production. One of the first cross-sector hydrogen initiatives in Germany is GET H2. RWE, BASF, BP, Evonik, Nowega, OGE, Thyssengas, Uniper and a host of other companies and scientific institutions are participating in the project. GET H2 spans the entire hydrogen value chain, from production and transport to usage. The long-term objective is to build a nationwide hydrogen infrastructure in Germany. As part of the initiative, in 2020 we joined forces with partners in the vicinity of our Lingen power station to launch the GET H2 Nukleus project. By 2026, three electrolysers are set to be built on the site, each with a capacity of 100 MW. The aim is to use electrolysis technology on a larger scale to bring it to mass production and unlock economies of scale. As a first step, we want to trial two electrolysis technologies under industrial conditions. To make this possible, we have ordered a 10 MW pressurised alkaline electrolyser from Sunfire and a 4 MW proton exchange membrane (PEM) electrolyser from

Linde. RWE will own and operate both systems. The combined pilot plant will generate up to 290 kg of hydrogen per hour using green power as of mid 2023. The trial is currently scheduled to last three years and we will be investing approximately €30 million. The government of Lower Saxony believes the initiative is so important, that it wants to help shoulder the costs.

RWE and OGE launch large-scale hydrogen infrastructure project. During the year, we launched another initiative for driving the development of German hydrogen infrastructure together with gas grid operator OGE. The project is named H_2ercules, and both partners have clearly defined roles: RWE will provide the green hydrogen and OGE will deliver it to the customer. To ensure the latter, our partner will need to convert existing natural gas pipelines to carry hydrogen and also build new ones. The plan is to construct a network spanning approximately 1,500 kilometres that will connect electrolysers, storage facilities and import terminals in the north with industrial customers in the west and south of Germany. By the end of the decade, RWE plans to construct electrolysers with a total capacity of 1 GW along the pipelines and import large volumes of hydrogen. We are also planning to connect no less than 2 GW of hydrogen-capable gas-fired power stations to the network. RWE and OGE made the infrastructure concept for H_2ercules public in March 2022, with a view to completing the project as early as 2030. The fact that the initiative is something of a herculean task is also reflected in the required budget, which we have set at €3.5 billion. The consumption centres located along the planned route will account for around two-thirds of Germany's expected hydrogen demand. The first major companies, including Thyssenkrupp for example, have expressed their interest in being connected to the network.

EU-backed project in the Netherlands – RWE turns waste into hydrogen. The prospect of a circular economy is becoming increasingly popular in Europe. A key element is recycling waste – namely by turning it into raw materials for manufacturing purposes, for example. This is where RWE's Dutch project, FUREC (Fuse, Reuse, Recycle), comes in – which received a €108 million grant from the EU Innovation Fund in early 2023. We want to turn waste into hydrogen that can then be used in the chemical industry or to generate power. First, we will need to develop a waste-to-hydrogen plant at the Chemelot industrial park in the Dutch province of Limburg. The plan is to process waste from the region, creating biomass pellets which are then turned into H_2. The hydrogen is considered to be 'green' if it is made using organic materials, and is circular if it is recovered from plastic waste. FUREC is pioneering in three areas: hydrogen production, CO_2 reduction and waste management. The final decision on the construction of the plant will be made in the coming year. If the project becomes a reality, it could serve as a blueprint for similar projects at other RWE sites across Europe.

Underground carbon storage – an opportunity for our Pembroke gas-fired power plant. The complete decarbonisation of industrial processes will most likely remain elusive in the coming decades. So the question of whether Europe is able to meet its target of carbon neutrality by the middle of the century or not will essentially depend on how we deal with the CO_2 that is unavoidably emitted during manufacturing processes. One option is to capture the carbon dioxide and store it below ground, preventing it from entering the atmosphere, in a process known as carbon capture and storage (CCS). Countries such as the UK, the Netherlands and Norway are either already using CCS technology or are planning its application on an industrial scale.

RWE has been exploring CCS technology for many years now and, to date, our R&D projects in this field have largely been focused on the Niederaussem Innovation Centre in the Rhenish lignite-mining region. We now have another site, the Pembroke Net Zero Centre (PNZC), located next to the eponymous gas-fired power station in Wales. The site will be dedicated to a range of activities aiming to decarbonise the energy economy. In addition to CCS, we are also looking into the production and electrification of hydrogen and are even researching floating offshore wind in the Celtic Sea. Most recently, the PNZC honed in on the technical options for separating carbon dioxide from flue gases and commissioned Fluor Corporation to produce a feasibility study. The results have been available since early 2023 and we will use them in deciding on possible retrofits to the Pembroke power plant or other generation assets.

Carbon as a component of sustainable aviation fuel. CCS technology is used to store captured carbon dioxide in subterranean layers of rock on land or under the seabed. A clever alternative would be to give the CO_2 a purpose, for example by combining it with green hydrogen to create chemical products (e. g. plastics) or synthetic fuels. This is known as carbon capture and usage (CCU). For more than ten years now, we have been developing techniques that use CO_2 in an ecologically meaningful way. In doing so, we collaborate with manufacturing firms, universities and research institutes.

One of our current R&D projects is investigating the potential for deriving sustainable aviation fuel from carbonaceous waste. In doing so, we are collaborating with BP Europa and the Jülich Research Centre. The first project milestone was compiling a study titled 'NRW-Revier-Power-to-BioJetFuel', which focused on determining what regulatory framework would be necessary to operate a demonstration plant in the Rhenish region for deriving synthetic fuels from alternative carbon sources (e. g. sewage sludge or biomass). The study also considered to what extent the resulting fuels could be further processed and used for industrial applications in an existing refinery in North Rhine-Westphalia. The report was finalised in May 2022 and the results are now being used to assess the feasibility of a concrete initiative. We are planning to take carbon dioxide from the flue gases of a sewage sludge incineration plant and convert it into kerosene by adding green hydrogen. The hydrogen will be manufactured on site using electricity from a nearby wind farm. Alternatively, it could also be delivered by pipeline, in which case an offshore wind farm in the North Sea could act as a power source for the electrolysis. The proof of concept is likely to be finished in the summer of 2023. If the results are promising, project development for the construction of a carbon capture demonstration plant could start as early as this year. However, this requires the necessary regulatory framework to be established which allows for the application of sustainable fuels.

How we plan to remove carbon dioxide from the atmosphere. According to the Intergovernmental Panel on Climate Change (IPCC), it will not be possible to meet the Paris Agreement's 1.5-degree warming target by simply emitting less CO_2. In addition, comprehensive measures must be applied to remove carbon dioxide from the atmosphere. One particularly promising project aimed at delivering these negative emissions is our Dutch initiative, BECCUS@Amer&Eemshaven. The concept involves our Amer and Eemshaven power stations, which are currently hard coal and biomass-fuelled, being converted to run on 100 percent biomass. The fuel is deemed carbon-neutral as the gases emitted when burning the plants are reabsorbed as the vegetation grows back. The initiative has to go one step further to achieve negative emissions. The plan is to capture the carbon dioxide emitted by the two plants. We could then either store it underground or use it to produce chemical raw materials, which are entirely reliant on CO_2. This would allow us to play an integral part in helping the Netherlands to reach its climate targets. However, the local authorities will need to introduce a suitable regulatory framework offering economic incentives for projects such as BECCUS@Amer&Eemshaven. We remain optimistic that this framework can be established, allowing us to move forward with our plans.

2.3 Business environment

Russia's war against Ukraine caused severe turbulence on European energy markets with electricity and gas trading at extreme highs. In response, the EU and the UK introduced new energy policies to become more independent of commodity imports from Russia. In doing so, the countries have moved to expedite the expansion of renewables. Temporary special levies on energy producer's revenues and relief packages for customers were also unveiled. Meanwhile, the US government introduced its Inflation Reduction Act, paving the way for a stable, attractive support framework for investments in green tech.

Regulatory environment

EU Commission unveils REPowerEU package of measures. Since February 2022, political and economic developments on the energy markets have been dominated by the war in Ukraine. Cancelled commodity deliveries from Russia have caused prices to soar to record highs and led various European states to introduce measures to safeguard security of supply. The EU also responded swiftly to the new political situation. In May, the EU Commission unveiled REPowerEU, a package of measures intended to establish a climate-friendly European energy supply that is independent of Russia. At its core, the package envisages an accelerated expansion of renewables, with an increased 45 % share of primary energy consumption by 2030; the previous target had been set at 32 %. The EU aims to boost wind power capacity to 510 GW and increase solar capacity to almost 600 GW over the current decade. In addition, it is looking to drive the ramp-up of the hydrogen economy, particularly in the transport and industrial sectors. By 2030, annual domestic green hydrogen production volumes in the EU should hit 10 million metric tons – with imports to match. According to the Commission's plans, Europe's future gas supply will rely largely on imports of liquefied natural gas (LNG) from overseas.

Once the European heads of government had thrown their weight behind the package at the end of May, the Commission began drafting the necessary legislation. The European Parliament and the Council of Ministers have already reached a provisional agreement on financing: the EU recovery package introduced during the pandemic will be bolstered by an additional €20 billion. The necessary funds will be raised through the sale of emission allowances from the Innovation Fund (€12 billion) and the frontloading of allowances (€8 billion).

EU wants to overhaul emissions trading. In December, the European Parliament and the Council of Ministers agreed on a reform of the European Emissions Trading System (ETS), which is due to become effective on 1 January 2024. According to the plans, the sectors covered by the ETS will have to reduce their greenhouse gas emissions by 62 % by 2030 compared to 2005. The previous target had been set at 43 %. The ambitious guideline is a result of the EU's 2021 decision to raise its climate targets. To drive decarbonisation, the EU will cut the number of certificates in 2024 and 2026 by 90 million and 27 million, respectively. The number of available CO_2 certificates issued to the market will be reduced annually by 4.3 % (from 2024) and 4.4 % (from 2028). Currently, the reduction factor is 2.2 %. In addition, each year 24 % of the surplus certificates in circulation will continue to be held back until 2030 and transferred to a market stability reserve. Under previous legislation, the rate was to be lowered to 12 % in 2024. The reform also provides for a separate emissions trading system for the transport and construction sectors, which is expected to be implemented by 2028 at the latest.

Taxonomy criteria for gas and nuclear plants approved. In mid-2022, it was established that gas-fired and nuclear power plants can be classified as sustainable subject to certain criteria in accordance with the European Taxonomy Regulation. In February 2022, the EU Commission signed a delegated act that established the necessary classification framework. The European Parliament and the Council of Ministers indirectly gave their approval by allowing their right to veto to expire on 11 July. The criteria, put forward by the Commission therefore entered into force on 1 January 2023. The regulations relating to gas-fired power stations are relevant for RWE: these stations can be considered sustainable transition activities, provided they are approved by 2030. They must replace more emission-intensive plants and be exclusively fired with environmentally friendly gases such as hydrogen from 2036 onwards. In addition, their CO_2 emissions should not be too high. The delegated act specifies two upper limits, one of which must be complied with: 270 g CO_2 / kWh in direct greenhouse gas emissions or 550 kg CO_2 / kW as the annual average of direct emissions over 20 years.

EU nations and the UK introduce extraordinary levies on electricity revenues. In light of the extremely high energy prices, many European countries introduced measures to bring relief for consumers and redirect producers' excess earnings. Since then, power producers must pay temporary levies on their revenues, with these levies taking effect above certain electricity price thresholds. In September, the EU had specified a structural framework for this purpose, stipulating that the measures be limited to generation technologies with low variable costs and respectively high margins. These include e. g. run-of-river, lignite-fired and nuclear power stations as well as wind and solar farms. Gas-fired power plants should remain exempt. The EU recommended only taxing revenues above a price of €180 / MWh, but also gave countries the option to set technology-specific price limits that deviate from the benchmark. Off the back of Brussels' cornerstones, many EU countries introduced temporary levies on electricity producers' revenues. The UK has since also enacted a similar tax. In the following section, we discuss the individual power revenue levies in our key markets Germany, the Netherlands and the UK.

Germany enshrined the EU's guideline into law in late 2022, providing for a 90 % redirection of electricity revenue above a technology-specific price level. The levy has been in force since 1 December 2022 and is due to expire on 30 June 2023 – although it may be extended to 30 April 2024. The revenue cap results from the sum of two components: a technology-specific benchmark cost and a premium. The latter amounts to €30 / MWh, which rises for wind and solar power systems depending on the market price. The benchmark costs can vary widely even for the same technology. For renewables, they are derived from the price guaranteed under the support framework of the Renewable Energy Act (EEG). Additionally, there is a floor of €100 / MWh for offshore wind farms. The benchmark costs for renewables assets that do not receive support are also set at €100 / MWh. The figure for lignite-fired plants is €30 / MWh plus 1.236 times the price of CO_2 emission rights. For our three most modern lignite units, this figure increases by €20 / MWh to account for the fact that we are decommissioning them ahead of schedule (see next page). The benchmark costs for nuclear energy assets are set at €40 / MWh (December 2022) and €90 / MWh (since 1 January 2023), respectively. The amount that is redirected is calculated on a monthly basis using the average prices achieved. Hedges for the levy period are taken into account. Gas-fired power plants and hard coal-fired power stations remain exempt from these measures.

The Netherlands will also redirect 90 % of electricity revenue above a certain price threshold. According to current plans, the price limit will be set at €130 / MWh. Due to high fuel costs, biomass plants are expected to be subject to a higher limit of €240 / MWh. Unlike in Germany, hard coal-fired power plants are also affected. The revenue cap for these assets is based on the total variable costs of an efficient power station plus a premium of €40 / MWh. As in Germany, the levy will be applied on a monthly basis between 1 December 2022 to 30 June 2023 and take hedges into account. The legislative process had not yet been completed when this report was published.

The UK has also introduced a special levy on electricity producers' revenue. Since 1 January 2023, revenue above £75 / MWh is taxed at 45 % – regardless of the technology. Realised prices are calculated based on an annual average that includes hedges. As in the EU, gas-fired power plants are exempt from the levy. The same goes for renewables, which are supported via contracts for difference.

Germany lays foundations for accelerated expansion of renewables. As soon as the coalition between Germany's Social Democrats, Greens and Free Democrats assumed office at the end of 2021, they made the accelerated expansion of renewable energy a top priority. The government laid out its plans in the Easter Package on 6 April 2022, which proceeded to be enshrined in law three months later by way of various legislative amendments. The changes stipulated that electricity production from renewables should hit 80 % of gross electricity consumption by 2030. The previous target had been set at 65 %. The total capacity of German offshore wind farms shall increase to 30 GW over the current decade. A target of 70 GW is planned for 2045. The law also introduces new targets for onshore wind and photovoltaic capacities, which shall increase to 115 GW and 215 GW respectively by 2030. By the middle of the decade, the federal government wants to achieve annual build-out rates for these two technologies of 10 GW and 22 GW, respectively. A new legal principle that the construction and operation of renewables is a matter of significant public interest which contributes to public security will help achieve this target. The regulation sets a new precedence for weighing up other protected interests, ensuring that existing investment barriers are removed, and planning and approval processes are accelerated. Every state is obligated to dedicate an average of 2 % of its land for onshore wind. This target needs to be met by 2032. Nationwide, a total of 0.8 % of land is currently earmarked for wind energy.

The support framework for offshore wind has also been redesigned by introducing a two-track system. In addition to sites that have been pre-investigated by the Federal Maritime and Hydrographic Agency, wind power developers can now also bid for sites that have not yet been investigated. The two tracks involve different auction criteria and procedures. Pre-examined sites must satisfy qualitative criteria as well as financial bidding considerations. For sites that have not yet been investigated, all of the auction participants bid for support. If several zero-subsidy bids are submitted, in the next round the bidder with the highest bid for the site is awarded the contract.

The law reform also brings relief for consumers: financial support for renewables will no longer be accounted for with a levy included in the price of electricity but will instead be financed via the federal budget.

Coal exit in the Rhenish region brought forward to 2030. In early October, we reached an agreement with the German government and the state of North Rhine-Westphalia to stop generating electricity using lignite in the Rhenish region in 2030. That is eight years earlier than originally planned. We will receive no additional payments for doing so. The amount of compensation set forth in the Coal Phaseout Act of 2020 totalling €2.6 billion will therefore remain unchanged. However, this figure still needs to be approved by the EU Commission. The new exit plan for the Rhenish region was enshrined in law at the end of 2022. Compared to the former agreement, approximately 280 million metric tons of coal will remain buried in the ground and will not be used for power generation. In doing so, we are making an important contribution to meeting both German and international climate protection targets. At the 2015 Climate Change Conference in Paris, the global community committed to limiting global warming to well below 2 degrees Celsius compared to pre-industrial levels. Our actions to date were already consistent with this target, as officially confirmed by the independent Science Based Targets initiative in late 2020. By expediting our phaseout of lignite-fired power generation, we are laying the foundations to operate in line with the Paris Climate Conference's more ambitious target of limiting the temperature increase to 1.5 degrees Celsius. Bringing forward the phaseout mainly affects our three most modern lignite-fired plants with a combined capacity of 3.1 GW, that were expected to remain operational until 2038. They are now due to be decommissioned on 31 March 2030. However, the German government can also request that the plants then be put on standby and not decommissioned until late 2033.

In conjunction with the agreement to expedite the phaseout of lignite, the German government and the state of North Rhine-Westphalia have also deferred the decommissioning of two power plant units, Neurath D (607 MW) and Neurath E (604 MW), originally scheduled for 31 December 2022. This is intended to reduce the amount of gas used in power generation during the energy crisis. The two units will remain online until 31 March 2024. The government reserves the right to decide whether to again extend their lifetimes or to transfer the units to a power plant reserve. Both measures would be limited to 31 March 2025.

The decision to bring the lignite phaseout forward will have far-reaching consequences for many RWE employees. Although we will need more staff in the short term to operate additional lignite power stations during the present energy crisis, staff reductions will accelerate towards the end of the decade. As is already the case, a range of compensatory measures have been planned for those impacted, e. g. early retirement plans and a statutory adjustment allowance. Younger employees will be offered additional training, allowing them to take on new roles within or outside the company.

German government activates emergency gas plan. In March 2022, following the invasion of Ukraine, one of the first measures taken by the German government was activating the Emergency Plan for Gas, which is based on an EU regulation and has been around since 2019. The plan has three phases: the first was invoked on 30 March 2022, followed by the second on 23 June, which is still in force. Phase 1 (the Early Warning Level) is activated when a significant drop in gas supply is possible, whereas phase 2 (Alert Level) is triggered when gas supply is already disrupted. To enter the third phase (Emergency Level), which has not yet been activated, there has to be a significant drop in gas deliveries, which the market is not able to withstand. The German government would then be authorised, at its discretion, to intervene and initiate gas rationing, if necessary.

New law establishes minimum fill levels for German gas storage facilities. At the end of April 2022, the German Gas Storage Act entered into effect. It aims to ensure that enough gas is available for the winter months. The law sets minimum fill levels for German gas storage units: 65 % as of 1 August, 80 % as of 1 October, 90 % as of 1 November and 40 % as of 1 February. In July, the Federal government issued a decree to raise the limits for 1 October and 1 November to 85 % and 95 % respectively. Gas storage operators are responsible for monitoring compliance with these requirements. If the lessees do not fill booked capacities sufficiently, they are at risk of losing them. The capacities would then be handed over to the entity responsible for their market zone, which ensures the right fill level. The law will expire in April 2025.

Federal government passes LNG Acceleration Act. To diversify gas procurement and drive independence of Russian natural gas, in May, Germany's lower house passed the LNG Acceleration Act. By temporarily forgoing environmental impact assessments and curtailing the public consultation process, the aim is to rapidly construct terminals for receiving and regasifying LNG along with the necessary pipeline infrastructure. According to the law, actions against LNG projects no longer have a suspensive effect and the appeals process is limited to one instance. The operational permits for the terminals will expire in 2043 at the latest. After that, the terminals are only to be used for climate-neutral gases such as green ammonia.

Federal government puts coal and oil-fired plants back on the market to save gas. In July, the Substitute Power Stations Act entered into force in Germany. It provides for additional coal and oil-fired power stations to be called upon to cut down on gas-fired power generation. The law expires at the end of March 2024. The gas replacement fleet can be used on the wholesale market. It has a capacity of around 10 GW and includes essential hard coal-fired power stations (2.6 GW) which were due to be closed in 2022 and 2023 in line with the Coal Phaseout Act, as well as stations in the existing grid reserve which run on hard coal (4.3 GW) or oil (1.6 GW). The gas replacement fleet is rounded off by lignite-fired power plants (1.9 GW), which are currently on legally mandated security standby. These include three RWE units, Niederaussem E and F as well as Neurath C, with a total capacity of 0.9 GW. These plants came back online in October. The necessary regulation was only introduced at short notice. It stipulates that the lignite units should stay online until 30 June 2023. If they are needed beyond that date, the government can extend their lifetimes. The new law also allows the government to introduce measures to limit or cease gas-fired power generation in the event of emergencies, although this does not apply to combined heat and power (CHP) plants. These interventions should last no longer than six months.

Germany extends lifetime of nuclear plants by three and a half months. To ensure security of supply in the winter of 2022 / 2023, the government also extended the operational lifetimes of Germany's three remaining active nuclear power stations. According to the 19th amendment to the Atomic Energy Act, which was approved by the upper and lower houses in November, plants may produce power until mid-April 2023. Originally, they were due to be shut down at the end of 2022. The units Neckarwestheim 2 and Isar 2 as well as RWE's Emsland power station are affected. However, they do not need to be equipped with new fuel rods. We expect our Emsland power plant to generate around 2 TWh of electricity during this extension period.

The Netherlands suspends output limits for coal power stations. On 20 June 2022, the Dutch government repealed a law limiting the use of hard coal for power generation. The decision has yet to be formally approved by parliament. According to the law, annual coal-fired CO_2 emissions in the period between 2022 and 2024 were not to exceed 35 % of the individual power plant's theoretical coal-fired capacity. The operators were due to be compensated accordingly. By repealing the law, the Dutch government is looking to rely on more coal-fired power generation to cut down on natural gas usage. Negotiations concerning the extent of compensation due to the operators for limiting power plant capacity in the first half of 2022 are ongoing.

US government creates long-term support framework for green technologies. After protracted factional negotiations, the Democratic Party in the USA passed their social spending and climate package. After both the Senate and the House of Representatives had approved the package, President Joe Biden signed the bill into law in mid August. The Inflation Reduction Act extends the support scheme for renewables by another ten years, and accordingly new plants will receive production tax credits or investment tax credits. Moving forward, hydrogen and battery projects will join wind power and solar systems in being eligible for support. An additional tax benefit is applied if a certain portion of the required raw materials and plant components are sourced nationally – a move that should strengthen the US economy.

New customs requirements for importing solar modules to the USA. In June 2022, the United States introduced new sanctions on products from the Chinese region of Xinjiang. This is due to the suspicion that members of the Uyghur ethnic group are being used as forced labour to manufacture products and mine raw materials in Xinjiang. Imports are therefore subject to extensive checks upon arrival in the USA. Importers must provide documentation to prove their goods are not from Xinjiang. The region is a leading provider of minerals for solar cells. The photovoltaic industry has therefore been particularly affected by the documentation requirements. Due to the time-consuming reviews of solar module deliveries, there have been considerable project delays including for RWE. In 2021 there were similar delays when the USA sanctioned individual Chinese companies.

No US tariffs on southeast Asian solar panels for the time being. After a protracted investigation, the US Department of Commerce announced in December that numerous solar module manufacturers are dodging tariffs on panels made in China. According to the authorities, the companies had components which were largely produced in China assembled in Cambodia, Malaysia, Thailand or Vietnam with the aim of then exporting them from there to the USA. In future, manufacturers will need to prove that their products do not contain certain Chinese components in order to avoid tariffs. The findings of the investigation are irrelevant to solar panels that have already been delivered. US President Joe Biden had taken an executive action to prevent duties from being imposed on solar modules from the aforementioned southeast Asian countries until mid-2024. The aim of this action was to reassure the market. The probe conducted by the US Department of Commerce had caused major uncertainty in the US solar industry and triggered a sudden halt to imports of southeast Asian modules. As a result, there were additional delays for RWE projects.

Market environment

War in Ukraine dampens economic recovery in RWE's core markets. According to current data, global economic output was up by around 3 % in 2022 versus the previous year. In Germany, growth was reported to be around 2 %, whereas in the UK and in the Netherlands it was about 4 %. The start of the year saw the effects of the pandemic subside as pent-up demand propelled the economy. Due to the outbreak of the war in Ukraine, however, the economy soon slipped back into crisis mode. More than anything else, the limited supply of commodities and the associated extreme price hikes dampened recovery. Inflationary trends and supply chain bottlenecks that were already evident in 2021 intensified. In the USA, recovery also slowed, with GDP rising around 2 % in the past year.

German power consumption significantly lower than the previous year. Surveys carried out by the German Association of Energy and Water Industries (BDEW) indicate that German electricity consumption last year was down 3 % on 2021. The main reason for this was the range of energy saving measures taken in response to soaring electricity prices. The mild weather also played a part. For these same reasons, consumption also declined in the UK (– 5 %) and the Netherlands (– 4 %). In the USA however, power consumption rose by as much as 3 %.

Wind conditions better than in 2021. Utilisation and profitability of renewables assets are largely weather-dependent. This is why wind speeds are extremely important. In the year under review, our production sites in Europe reported lower velocities than the long-term average, while those in North America measured similar if not higher speeds. In comparison to 2021, wind conditions have improved at the majority of our locations. The utilisation of run-of-river power stations depends on precipitation and melt water volumes. In Germany, where most of the RWE Group's hydropower plants are located, these volumes were below the long-term average and also fell short of the previous year's figure.

Average RWE wind farm utilisation	Onshore		Offshore	
%	2022	2021	2022	2021
Germany	19	17	37	35
United Kingdom	27	27	39	35
Netherlands	28	30	–	–
Poland	28	27	–	–
Spain	22	24	–	–
Italy	22	24	–	–
Sweden	30	29	45	47
USA	33	32	–	–

Prices for natural gas, hard coal and emission allowances hit unprecedented levels. The utilisation and earnings of our conventional power plants are heavily dependent on how electricity prices and the price of the fuel needed for electricity production (gas, coal etc.) and emission allowances perform. Natural gas became significantly more expensive from mid-2021 onwards. Spot prices at the Dutch Title Transfer Facility (TTF) – the main trading hub in Continental Europe – averaged €124 / MWh in 2022, which clearly surpassed the previous year's price (€47 / MWh). This is largely attributable to the general halt in gas imports via pipelines from Russia to Central Europe due to the war in Ukraine, with the affected countries being forced to procure significantly more expensive LNG elsewhere. There was also a massive price hike on the gas futures markets due to the general uncertainty regarding the future supply situation in Europe. TTF forward contracts for 2023 averaged €114 / MWh last year. In comparison, in 2021, the 2022 TTF forward traded at €33 / MWh.

Prices for hard coal used in power plants (steam coal) also rose notably in the year under review. Deliveries to the ARA ports (ARA = Amsterdam, Rotterdam, Antwerp) including freight and insurance were settled for an average of US$290 / metric ton in 2022, compared to US$122 / metric ton the previous year. As with gas trading, post-pandemic economic recovery and the war in Ukraine were the main price drivers. The embargo on Russian coal imports fuelled European demand for supplies from overseas even further. In some EU countries, such as Germany, prices were also pushed higher due to the fact that more coal was used to generate electricity in response to the high gas prices and the reduced availability of French nuclear power plants. Energy markets are pricing in continued strain for the foreseeable future, with forward trading prices for hard coal also increasing substantially. In the year under review, the 2023 forward (API 2 Index) was quoted at an average of US$222 / metric ton. This is US$127 more than was paid for the 2022 forward in 2021.

An increasingly important price factor for fossil fuel-fired power plants is the procurement of CO_2 emission allowances. A European Union Allowance (EUA), entitling the holder to emit one metric ton of carbon dioxide, was traded at an average of €84 in 2022 – compared to €54 the year prior. This figure is based on contracts for delivery that mature in December of the following year. The rising prices can largely be traced back to the EU's decision to raise its emissions target for 2030, leading to a further reduction in the number of available emission allowances. As explained on page 31, the necessary reform to the Emissions Trading System was approved in late 2022 and will become effective in early 2024. Many market participants anticipated this and began stockpiling EUAs some time ago. Furthermore, the increased use of coal-fired power plants led to more emissions and a correspondingly higher demand for CO_2 certificates.

After leaving the EU, the United Kingdom introduced its own CO_2 emissions trading system. UK Allowances (UKAs) have been traded on the secondary market since the first auction in May 2021. In 2022 prices averaged £83. The benchmark figure for the previous year was £57.

Surge in fuel and emission allowance prices impacts cost of electricity. Due to soaring fuel prices, quotations on European wholesale electricity markets reached record highs. Base-load electricity was traded at €237 / MWh on average in 2022 on the German spot market. The benchmark figure for the year prior was €97 / MWh. In the UK and the Netherlands, spot prices rose from £118 to £206 / MWh and from €103 to €243 / MWh, respectively. Electricity forward trading painted the following picture: the German 2023 base-load forward cost €298 / MWh on average. By way of comparison, companies paid €89 / MWh for the 2022 forward the year prior. One-year forward prices surged from £92 to £265 / MWh in the UK and from €89 to €263 / MWh in the Netherlands.

The North American electricity market is subdivided into different regions, which are managed by independent transmission system operators. Our most important market region is currently Texas, where most of our wind farms in the USA are located and where the power grid is operated by the Electric Reliability Council of Texas (ERCOT). Here, the average electricity spot price averaged US$66 / MWh, compared to US$179 / MWh the year before. However, the figure for 2021 was skewed due to Winter Storm Uri, which triggered extreme price spikes for a week in February. Disregarding this one week, the 2021 average price was US$34 / MWh. The ERCOT futures market developed as follows: the one-year-forward became more expensive, rising from US$37 / MWh to US$57 / MWh. The higher gas prices in the USA were largely attributable to the increase in LNG exports to Europe.

Improved margins on electricity sales. In order to mitigate risks associated with earnings, we sell most of our power generation forward and hedge the prices for the necessary fuel and emission allowances using forward transactions with a lead time of up to four years. The margins realised in 2022 were thus greatly defined by the conditions of the forward contracts, which were concluded in previous years. We achieved better margins with these advance sales for most of our power stations than we did in 2021. At times, margins realised for short-notice spot trading were significantly up on the previous year's level. In addition, volatility on the energy markets allowed us to achieve significantly higher earnings from the short-term optimisation of our power plant dispatch.

2.4 Major events

The energy industry has been affected by the impacts of the war in Ukraine since early 2022. Despite the challenging environment, we have managed to hit a number of milestones in our growth strategy. The acquisition of Con Edison Clean Energy Businesses, in particular, signified a huge step forward, making us one of the leading solar power producers in the United States. We also secured our first maritime sites for offshore wind farms there in two auctions. We also had important breakthroughs in Europe. Triton Knoll and Kaskasi, two large-scale offshore wind farms, went online and we reinforced our flexible generation portfolio with the acquisition of Dutch gas-fired power plant, Magnum. In this chapter, we present the main events that took place in 2022 and the beginning of 2023, focusing on those which are not outlined elsewhere in the review of operations.

Significant financial pressure from halt of coal imports from Russia. Russia's invasion of Ukraine was one of the defining moments of last year. Although RWE does not have any business activities in Russia or Ukraine, our company is among those directly affected by the economic impact of the conflict. When the war broke out at the end of February 2022, we had contracts for deliveries of Russian hard coal totalling 12 million metric tons through to 2025. The agreed prices were far below the market average observed since 2021. Sanctions introduced by the UK and the EU caused imports to grind to a halt. We had to compensate for lost volumes by making purchases from third parties at much less favourable conditions to meet existing supply obligations. This resulted in a financial loss of €748 million for RWE.

When the war broke out, our contractual gas procurement volumes from Russian producers totalled 15 TWh through to the end of 2023. Here too, we limited our financial risk exposure by procuring alternative gas supplies to cover the entirety of the contracted volumes. It is not yet possible to quantify the extent of the shortfall in deliveries.

RWE purchases Con Edison's renewable energy business. With the acquisition of Con Edison Clean Energy Businesses, we are accelerating our growth in renewables. The transaction was agreed in October 2022 and became effective on 1 March 2023, once all regulatory approvals had been received. The acquired company had been part of US group Con Edison and is a leading operator and developer of renewable energy plants in the United States. The company boasts 3.1 GW of power generation capacity, around 90 % of which is from solar systems. The portfolio is complemented by a development pipeline of more than 7 GW. With the addition of the Con Edison Clean Energy Businesses portfolio, RWE has now become the fourth-largest renewables player in the USA and the second-largest in the field of photovoltaics. The purchase price was based on a valuation of US$6.8 billion.

We will partially finance the acquisition with equity: on 10 October, we issued a mandatory convertible bond with a nominal value of €2,428 million to Qatar Holding LLC, a subsidiary of the Qatar Investment Authority. The 67.6 million new RWE shares resulting from the conversion of the bond in March 2023 represent 9.1 % of the increased capital stock.

RWE wins rights to lease sites for two offshore wind farms in the USA. In the past financial year, we laid the foundation for our first offshore wind power projects in the USA by successfully participating in two offshore lease auctions. The first auction took place in February, when RWE secured an area in the New York Bight for US$1.1 billion together with National Grid Ventures. The site is suitable for around 3 GW of generation capacity. Our successful bid gave us the right to develop the site and participate in upcoming offtake auctions. If the project progresses as planned, we will be commissioning a wind farm by the end of this decade.

At the second auction, which took place in December, we purchased the right to use a site off the coast of northern California for US$158 million. The area is located near Humboldt Bay and could one day be home to as much as 1.6 GW of offshore capacity. The water here is 700 metres deep, meaning the turbines will need to be erected on floating foundations. As explained on page 27 et seq., RWE has been involved in various demonstration projects dedicated to this new technology. The insights we have gained will now help us choose the best foundation structure. The floating wind farm off the coast of California could go online in the mid 2030s, provided the necessary approvals are granted within the required timeframe.

Success at Dutch offshore wind auction. We also proved successful in a tender process for an offshore wind site in the Netherlands. In November 2022, we won the contract for the Hollandse Kust West VII site, where we plan to build a wind farm with a capacity in excess of 760 MW. All turbines are expected to be online by early 2028. We will not receive state support for the undertaking. The project has been designed to allow the wind farm to be combined with e-boilers, battery storage systems and / or electrolysers for producing hydrogen. This will allow us to tailor power generation to demand, and thus contribute to grid stability.

Wind energy joint venture launched with Northland Power. In January 2022, RWE and Northland Power agreed to deliver three wind power projects together to the north of the island of Juist in Germany, creating more than 1.3 GW of generation capacity. A joint venture, in which RWE holds a 51 % stake and our Canadian partner owns a 49 % share, will be responsible for carrying out the project. In August, the companies agreed to collaborate on the delivery of another wind farm, which will also be built north of Juist and have a capacity of 225 MW. RWE was previously developing this project independently. Northland Power now holds a 49 % share. Two of the four joint venture projects have already been successful at auctions. The auctions for the remaining two initiatives will take place in 2023.

Large-scale wind farms completed in Europe and the USA. Last year, we successfully completed a series of wind power projects, thereby increasing our pro-rata capacity from this technology from 9.4 GW to 11.2 GW. We commissioned the following wind farms:

- In March 2022, El Algodon Alto in Texas entered commercial operation. Altogether, the wind farm's 91 turbines have a capacity of 200 MW. We invested approximately €280 million in the wind farm.

- One month later, we completed our Triton Knoll offshore wind farm. It is located off the eastern coast of England and has 90 turbines with a total capacity of 857 MW, making it one of the largest wind farms in the world. RWE holds a majority stake of 59 % in Triton Knoll and is also responsible for its operation. The other shares are held by the Japanese energy utilities J-Power (25 %) and Kansai Electric Power (16 %). The investment volume amounted to £2.4 billion. This figure includes expenses for the grid connection, which we will sell to an independent third party to comply with regulatory requirements.

- In June, the Swedish onshore wind farm Nysäter was inaugurated. The 114 turbines boast a combined capacity of 474 MW. Swiss infrastructure investment firm Energy Infrastructure Partners is the majority shareholder with a stake of 80 % and RWE holds a 20 % stake. In total, €575 million was invested in the wind farm.

- In November, the Blackjack Creek onshore wind farm in Texas was completed. It is wholly owned by RWE. In all, its 50 turbines have a capacity of 240 MW. The investment volume amounted to €225 million.

- By December, all 38 turbines of our Kaskasi wind farm in the German North Sea had been put online. Together, they have a combined capacity of 342 MW. Kaskasi is located 35 kilometres to the north of Heligoland. We are the sole owners of the wind farm and have invested approximately €780 million in the project. As explained on page 27, three turbines were fitted with recyclable rotor blades from Siemens Gamesa, which feature a new resin that allows the different materials to be separated after use. This is the first time that these environmentally friendly rotor blades are being used in Germany.

Hickory Park in the USA starts producing solar power. In the last fiscal year, we upped our solar capacities by 318 MW to 804 MW. At 196 MW, our new photovoltaic ground-mounted system, Hickory Park, in Mitchell County in the state of Georgia made a significant contribution in this regard. Its approximately 650,000 modules have been operating commercially since June 2022. The facility is enhanced with a 40 MW 2-hour battery storage system. This enables optimal timing of feed-ins to the local grid, which increases the solar farm's yield. We have spent around €250 million on Hickory Park and have concluded a 30-year power purchase agreement with energy provider Georgia Power.

RWE acquires solar developers in Poland and the UK. By acquiring two major solar developers, we laid the cornerstone for rapid expansion of photovoltaics in both Poland and the United Kingdom. First, we acquired Poland-based Alpha Solar, adding an approximately 3 GW solar project pipeline to our portfolio. The price totalled an equivalent of €123 million. The projects are located throughout Poland and are in various stages of development. In addition, we can welcome a team of around 60 that will help drive our ambitious expansion plans in Poland.

This was followed in early March 2023 by the acquisition of JBM Solar, a UK developer of solar and battery storage projects. The company owns a mature 6.1 GW development pipeline, with solar and battery storage accounting for 3.8 GW and 2.3 GW, respectively. The transaction puts us among the top three PV developers in the United Kingdom. We also gained a 30-strong team of experts. Most of JBM Solar's projects are being implemented in central and southern England. The first assets from the pipeline are scheduled to be commissioned by the end of 2024. We expect to build an average of some 450 MW per year thereafter.

Large-scale battery storage systems completed in Werne and Lingen. After only 14 months of construction, we were able to commission two megabattery storage facilities at our power plant sites in Werne and Lingen. The assets are being used to secure security of supply and have capacities of 72 MW (Werne) and 45 MW (Lingen), and storage volumes of 79 MWh and 49 MWh, respectively. We have invested around €50 million in the project.

Green light for the construction of megabatteries in Hamm and Neurath. In November 2022, we decided that our power plant sites in Hamm and Neurath should also host two large-scale battery storage facilities. The batteries will have a capacity of 140 MW (Hamm) and 80 MW (Neurath), and storage volumes of 151 MWh and 84 MWh, respectively. We are looking to start construction in 2023 and begin commercial operation in 2024. We have earmarked €140 million for the project.

RWE acquires Dutch gas-fired power station, Magnum. In June 2022, we agreed to acquire the Magnum gas-fired power plant in the Netherlands from Vattenfall. The transaction became effective on 31 January 2023 following the EU Commission's approval under competition law. Magnum is one of the most state-of-the-art power stations in the Netherlands. The facility has been in operation since 2013, and has a net capacity of 1.4 GW. The preliminary purchase price is €443 million. The transaction also includes a neighbouring 5.6 MW solar farm. Magnum is located a stone's throw away from our Eemshaven power station, which is fired using hard coal and biomass. We expect to leverage considerable synergies from the joint use of local infrastructure. Our new gas-fired power station can be operated with 30 % hydrogen following basic technical conversions. There is also the option to transition to 100 percent hydrogen use in the long term. This will allow

Magnum to be part of the future hydrogen infrastructure which we are looking to build together with partners from the energy and manufacturing sectors in the province of Groningen.

RWE proves successful at British capacity market auction. At two British capacity market auctions held in February 2022 and 2023, all participating RWE power stations secured a capacity payment. The first call for bids related to the period from 1 October 2025 to 30 September 2026. RWE plants with a secured capacity of 6,647 MW submitted qualifying bids – these assets are almost exclusively gas-fired and include two small new-build projects. The capacity payment was set at £30.59 / kW (plus inflation adjustment) and will be paid for the plants being online and contributing to the electricity supply during the above period. The second auction pertained to the period from 1 October 2026 to 30 September 2027. This time, RWE assets with a secured capacity of 6,638 MW were successful. We will receive a payment of £63 / kW (plus inflation adjustment) for their availability.

Gersteinwerk wins tender for German capacity reserve. Our F and G combined cycle gas units at the Gersteinwerk site in Werne (Westphalia) qualified for inclusion in the German capacity reserve once again. This resulted from a tender process held by the Federal Network Agency in February 2022. The stations will keep a total capacity of 710 MW in reserve in the period from 1 October 2022 to 30 September 2024, which can be used to safeguard grid stability whenever necessary. In return, we will receive an annual payment of €62.94 / kW. The two units had also been successful at the previous capacity auction. Given that they are standby stations, they stopped participating in the wholesale electricity market on 1 October 2020 and have since only been ramped up when ordered to do so by the transmission system operator.

KfW, Gasunie and RWE to build LNG terminal in Brunsbüttel. In March 2022, RWE signed a memorandum of understanding with the German state-owned development bank KfW and the Dutch gas network operator Gasunie to build a terminal for importing liquefied natural gas (LNG) to Germany. The facility will be built to the north-west of Hamburg in Brunsbüttel and process gas imports of up to 10 billion cubic metres (after regasification) annually as of 2026. We have already contractually secured usage rights for part of the capacities. We are planning to build another terminal at the same location to import climate-neutral ammonia.

On behalf of the government RWE charters two floating LNG terminals. Acting as an agent of the German government, in spring 2022 we chartered two special ships equipped to regasify LNG. These Floating Storage and Regasification Units (FSRUs) will provide a quick interim solution for landing LNG in Germany. The first ship arrived in Wilhelmshaven in December 2022 and the second arrived in Brunsbüttel in January 2023. The two FSRUs can deliver more than 10 billion cubic metres of natural gas annually. Uniper (Wilhelmshaven) and RWE (Brunsbüttel) are providing the onshore infrastructure. Together with EnBW, the two companies are also organising the LNG deliveries for the FSRUs. In February 2023, the first LNG delivery, supplied by Abu Dhabi National Oil Company (ADNOC), arrived in Brunsbüttel. In September 2022, we signed a memorandum of understanding with ADNOC for the company to export LNG to Germany over several years.

RWE secures LNG imports from the USA. To further expand our LNG procurement portfolio, in December, we signed a 15-year supply contract with US energy company Sempra Infrastructure for the delivery of 2.25 million metric tons of LNG (approx. 3 billion cubic metres) annually. The liquefied gas will be shipped from Port Arthur in Texas, where the requisite LNG terminal is still being planned. All the necessary approvals have now been received, meaning the facility should be operational by 2027. We will be free to market the liquefied gas, thereby aiding the diversification of European gas supply sources. The contractually secured liquid gas volumes will be sufficient to harness the full potential of our reserved regasification capacities at the planned LNG terminal in Brunsbüttel.

RWE and Equinor agree strategic partnership. In January 2023, RWE and Equinor entered into a strategic partnership to drive the ramp-up of the hydrogen economy and the expansion of renewables. The two companies are working towards harnessing Norwegian hydrogen to decarbonise the German energy industry within the context of a number of major projects. The plan is for Equinor to create up to 2 GW of capacity for producing 'blue' hydrogen in its domestic market of Norway by 2030. Blue hydrogen is produced using methane, and the resulting carbon dioxide is stored underground. The hydrogen would be transported via a North Sea pipeline to Germany, where it could be used to produce power. Over the current decade, RWE and Equinor are therefore looking to build hydrogen-capable gas-fired power stations totalling 3 GW. In addition, the partners are considering building offshore wind farms and electrolysers near the North Sea pipeline, so green hydrogen, which is expected to slowly replace blue hydrogen, can be fed into the grid. The partnership with Equinor also includes wind power projects in Norway and Germany that are exclusively focused on power generation. One basic requirement for the realisation of these major projects is the completion of the hydrogen pipeline between Norway and Germany. In addition, Germany's hydrogen infrastructure will have to be sufficiently developed.

End of the line for Neurath A lignite-fired unit and briquetting in Frechen. On 1 April 2022, Unit A of the Neurath lignite-fired power station stopped generating electricity. With a net capacity of 294 MW, the facility began operating in 1972. It was decommissioned in accordance with Germany's statutory coal phaseout timeline, which also spelled the end of the road for our Frechen lignite briquette production facility at the end of 2022. The employees affected by the closures have since either retired or taken on other roles at RWE.

2.5 Commentary on reporting

In our financial reporting, the RWE Group is broken down into five segments, which we present in detail in this chapter. Renewable energy, gas-fired power plants, energy storage, our hydrogen business and energy trading are distributed among the first four segments. These activities play a key role in the energy transition and therefore make up our core business. The fifth segment covers power generation from coal and nuclear energy, which will increasingly lose importance due to legally mandated phaseout roadmaps.

Group structure with five segments. This report is based on a Group structure comprising five segments, the first four of which represent our core business. The responsibility for the economic development of each segment lies with the individual RWE AG subsidiaries. This past year, we restructured our renewables activities. RWE Renewables will no longer be solely responsible for these operations. Instead, they have been distributed across three organisational units (see below). This change will not affect our reporting structure. The segments continue to be divided as follows:

1. **Offshore Wind:** We present our business relating to offshore wind here. It is now overseen by RWE Offshore Wind.

2. **Onshore Wind / Solar:** This is the segment in which we pool our onshore wind and solar business as well as parts of our battery storage activities. Depending on the continent, it is managed by RWE Renewables (Europe / Australia) or RWE Renewables Americas, the latter having been renamed RWE Clean Energy following the acquisition of Con Edison Clean Energy Businesses on 1 March 2023.

3. **Hydro / Biomass / Gas:** Generation from our run-of-river, pumped storage, biomass and gas power stations is pooled here. The segment also includes the Dutch Amer 9 and Eemshaven power plants, which run on biomass and hard coal, as well as individual battery storage systems. The project management and engineering consulting company RWE Technology International and our 37.9 % stake in Austrian energy utility KELAG are also allocated to this segment. The activities are overseen by RWE Generation, which is also responsible for designing and implementing our hydrogen strategy.

4. **Supply & Trading:** Proprietary trading of energy commodities is at the core of this segment. It is overseen by RWE Supply & Trading. The company also acts as an intermediary for pipeline and liquefied natural gas, supplies key accounts with energy, and undertakes a number of additional trading-related activities. Our German and Czech gas storage facilities also form part of this segment along with our LNG infrastructure development activities.

5. **Coal / Nuclear:** This is where we report on the activities which are not part of our core business. First and foremost, these consist of our German electricity generation from lignite and nuclear fuel as well as our lignite production in the Rhenish mining region to the west of Cologne. This segment also covers our investments in Dutch nuclear power plant operator EPZ (30 %) and Germany-based URANIT (50 %), which holds a 33 % stake in uranium enrichment specialist Urenco. Most of the aforementioned activities and investments are overseen by RWE Power.

Group companies with cross-segment tasks, such as the Group holding company RWE AG, are stated as part of the core business under the 'other, consolidation' line item. This also applies to our stakes of 25.1 % in German transmission system operator Amprion and 15 % in E.ON. However, we recognise dividends from E.ON in the financial result. The 'other, consolidation' line item also contains accounting effects of the consolidation of Group activities.

Transition to 'adjusted financial result'. As of fiscal 2022, we have adjusted the methodology for the presentation of the financial result. In the past, this indicator only contained unadjusted components. It was therefore affected by special items, which hindered the assessment of business developments. Examples include effects from the adjustment of discount rates used to determine nuclear or mining provisions, and temporary gains and losses from the valuation of currency derivatives used for hedging purposes. These special matters are now no longer assigned to the financial result, but are reported as part of the non-operating result, corresponding to the methodology applied to (adjusted) EBIT. We will use the term 'adjusted financial result' to express this in the future. In the table presenting the non-operating result, we now include the item 'Adjustments to the financial result'. To allow for comparison with prior-year figures, we present these using the new methodology.

Forward-looking statements. This report contains forward-looking statements regarding the future development of the RWE Group and its companies as well as economic and political developments. These statements are assessments that we have made based on information available to us at the time this document was prepared. Despite this, actual developments can deviate from the prognoses, for instance if underlying assumptions do not materialise or unforeseen risks arise. Therefore, we cannot assume responsibility for the correctness of forward-looking statements.

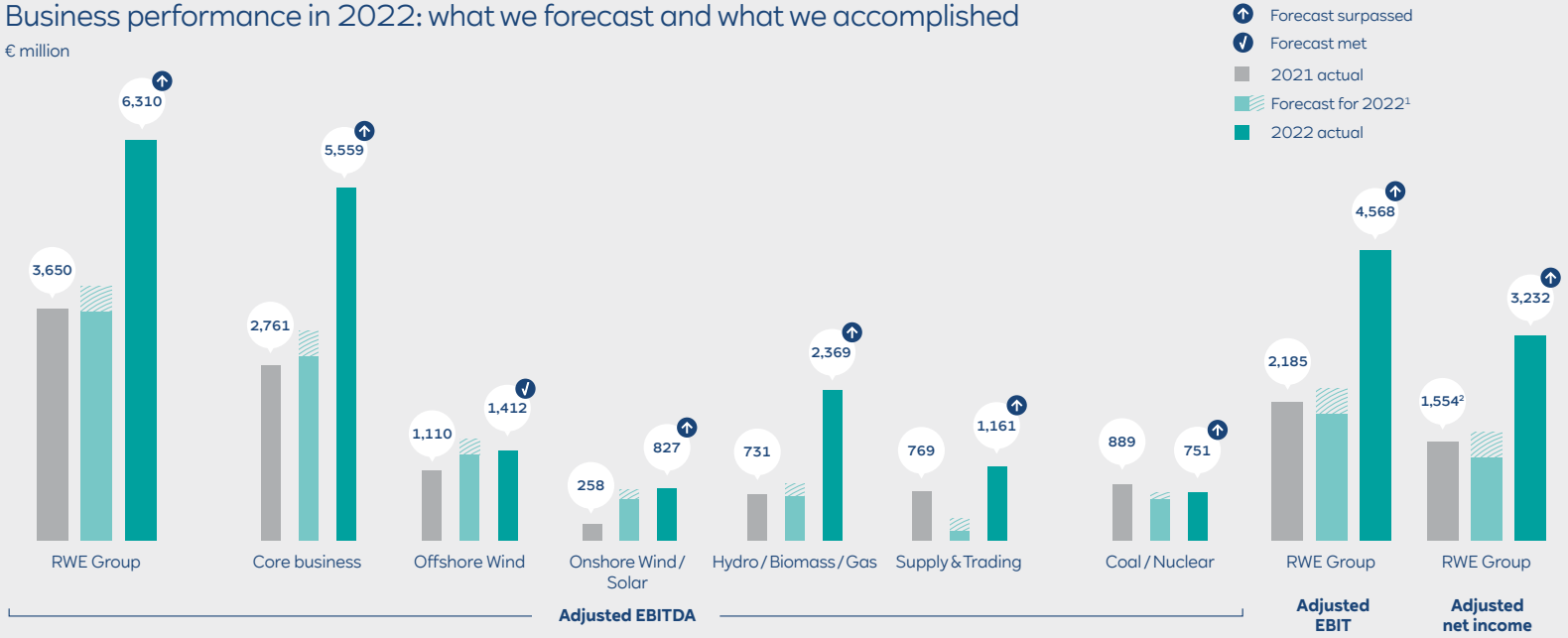
References. The contents of web pages and publications to which we refer in this chapter are not part of the combined review of operations and merely provide additional information.

2.6 Business performance

Our business performed so well in 2022 that we comfortably beat the earnings forecast published at the beginning of the year. We achieved EBITDA of €6.3 billion. The projected figure was between €3.6 billion and €4.0 billion. We also posted a significant gain over the previous year. This growth was predominantly due to improved conditions on the power generation market and a very strong trading performance. Furthermore, we benefited from the expansion of renewables, as a large number of new wind and solar farms contributed to the Group's operating earnings for the first time in 2022.

Business performance in 2022: what we forecast and what we accomplished

€ million



1 See pages 67 et seq. of the 2021 Annual Report. The hatched portion reflects the forecast range.
2 Adjusted figure (see commentary on page 44).

Power generation[1]	Renewables		Pumped storage, batteries		Gas		Lignite		Hard coal		Nuclear		Total[2]	
GWh	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Offshore Wind	10,203	7,564	–	–	–	–	–	–	–	–	–	–	10,203	7,564
Onshore Wind / Solar	19,011	16,503	–	–	–	–	–	–	–	–	–	–	19,011	16,503
Hydro / Biomass / Gas	6,269	7,879	52	41	51,507	52,257	–	–	7,241	6,952	–	–	65,264	67,301
of which:														
Germany	1,450	1,645	52	41	5,708	5,988	–	–	–	–	–	–	7,405	7,846
United Kingdom	519	473	–	–	38,464	35,263	–	–	–	–	–	–	38,983	35,736
Netherlands	4,300	5,725	–	–	4,821	6,647	–	–	7,241	6,952	–	–	16,362	19,324
Türkiye	–	–	–	–	2,514	4,359	–	–	–	–	–	–	2,514	4,359
Coal / Nuclear	16	18	–	–	186	147	50,019	45,916	–	188	11,883	22,704	62,316	69,179
RWE Group	**35,499**	**31,964**	**52**	**41**	**51,693**	**52,404**	**50,019**	**45,916**	**7,241**	**7,140**	**11,883**	**22,704**	**156,794**	**160,547**

1 Some prior-year figures restated.
2 Including production volumes not attributable to any of the energy sources mentioned (e.g. electricity from waste-to-energy plants).

Electricity production slightly lower year on year – strong gains from renewables. Last year, RWE generated 156,794 GWh of electricity, 2% less than in 2021. The decline was largely because Gundremmingen Unit C was taken offline with effect from 31 December 2021 as part of Germany's nuclear phaseout. This essentially halved the share of nuclear energy in power generation. Utilisation of our gas-fired power stations in the UK was above the prior-year level despite high fuel costs. Conversely, in both Germany and the Netherlands it was lower, in part as a result of gas shortages due to the war in Ukraine. An outage at Dutch unit Claus C from 3 January to 19 April due to steam turbine damage also came to bear. In addition, our gas-fired plant in Denizli, Türkiye was utilised less than in 2021, inter alia due to shortages in gas deliveries from network operator BOTAS.

A substantial gain was posted by renewables. The commissioning of new generation capacity and slightly improved wind conditions made a major contribution. Our German lignite-fired power plants also generated more electricity than in the previous year as they were utilised more due to the gas supply crisis. In addition, we put the Niederaussem E / F and Neurath C units back online in October 2022 in compliance with the German Substitute Power Station Act (see page 34). However, we also suffered volume shortfalls caused by power station closures: in line with the German lignite phaseout roadmap, Neurath B (294 MW), Niederaussem C (295 MW) and Weisweiler E (321 MW) were decommissioned at the end of December 2021. Neurath A (294 MW) followed suit as of 1 April 2022.

Power generation from renewables[1]	Offshore Wind		Onshore Wind		Solar		Hydro		Biomass		Total	
GWh	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Germany	2,202	1,811	1,081	939	8	3	1,450	1,645	–	–	4,741	4,398
United Kingdom	7,813	5,557	1,866	1,719	–	–	158	169	360	304	10,197	7,749
Netherlands	–	–	892	727	26	17	15	27	4,285	5,697	5,218	6,468
Poland	–	–	1,153	1,039	2	1	–	–	–	–	1,155	1,040
Spain	–	–	880	934	81	96	6	29	–	–	967	1,059
Italy	–	–	973	1,008	–	–	–	–	–	–	973	1,008
Sweden	188	196	305	293	–	–	–	–	–	–	493	489
USA	–	–	10,330	8,961	742	354	–	–	–	–	11,072	9,315
Australia	–	–	–	–	468	245	–	–	–	–	468	245
Rest of the world	–	–	137	41	78	81	–	71	–	–	215	193
RWE Group	**10,203**	**7,564**	**17,617**	**15,661**	**1,405**	**797**	**1,629**	**1,941**	**4,645**	**6,001**	**35,499**	**31,964**

1 Some prior-year figures restated.

Electricity production from renewables rose by 11% to 35,499 GWh. Wind power generation was up 20% on the previous year's level, driven above all by the progressive capacity expansion and more favourable weather conditions. Moreover, we increased our stake in the Rampion offshore wind farm (400 MW) in the UK from 30.1% to 50.1% with effect from 1 April 2021 and began to consolidate the shareholding fully as of that date. Solar power volumes also posted a strong rise. This growth was largely driven by the commissioning of new assets. By contrast, we produced 23% less electricity from biomass, in part owing to difficulties in commodity sourcing. Generation volumes from our run-of-river power stations declined by 16% due to dry weather, which resulted in lower river water levels.

In addition to our in-house generation, we procure electricity from suppliers outside of the Group. In 2022, these purchases amounted to 43,168 GWh (previous year: 48,151 GWh).

Higher installed capacity thanks to new wind and solar farms. As of 31 December 2022, we had an installed power generation capacity of 39.3 GW. This figure does not consider Con Edison Clean Energy Businesses, as the acquisition of this company only closed on 1 March 2023. Our generation capacity rose by 2.3 GW compared to 2021. The basis for this was the successful implementation of our growth strategy in the renewable energy business. Last year, we completed the Triton Knoll (857 MW) and Kaskasi (342 MW) North Sea wind farms, the El Algodon Alto (200 MW) and Blackjack Creek (240 MW) onshore wind farms in Texas as well as the Hickory Park ground-mounted PV array (196 MW) in the US state of Georgia (see pages 39 et seq.). However, some capacity was also taken offline: we decommissioned Unit A (294 MW) of the Neurath lignite-fired power station as part of the German coal phaseout.

In terms of generation capacity, gas is our No. 1 energy source, commanding a 36 % share by the end of 2022. Renewables take second spot, with a share of 33 %. Our biggest source of renewable energy is wind (11.0 GW), followed by solar and biomass (0.8 GW each), along with hydro (0.5 GW).

The geographic focus of our generation business is Germany, where 41 % of our installed capacity was located at the end of 2022. The United Kingdom and the Netherlands follow, accounting for shares of 27 % and 13 %, respectively. Fourth spot is taken by the USA, with 11 %. This share has since increased considerably as a result of the acquisition of Con Edison Clean Energy Businesses.

Installed capacity[1]	Renewables		Pumped storage, batteries		Gas		Lignite		Hard coal		Nuclear		Total[2]	
As of 31 December, MW	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Offshore Wind	3,517	2,318	–	–	–	–	–	–	–	–	–	–	3,517	2,318
Onshore Wind / Solar	8,247	7,082	128	28	–	–	–	–	–	–	–	–	8,375	7,110
Hydro / Biomass / Gas	1,263	1,285	296	168	13,869	13,901	–	–	1,469	1,469	–	–	17,200	17,115
of which:														
Germany	377	393	296	168	3,830	3,807	–	–	–	–	–	–	4,553	4,407
United Kingdom	133	139	–	–	6,929	6,984	–	–	–	–	–	–	7,315	7,376
Netherlands / Belgium	753	753	–	–	2,323	2,323	–	–	1,469	1,469	–	–	4,545	4,545
Türkiye	–	–	–	–	787	787	–	–	–	–	–	–	787	787
Coal / Nuclear	12	12	–	–	400	400	8,250	8,524[3]	–	–	1,482	1,482	10,171	10,445[3]
RWE Group[4]	**13,039**	**10,697**	**426**	**199**	**14,269**	**14,301**	**8,250**	**8,524**[3]	**1,469**	**1,469**	**1,482**	**1,482**	**39,265**	**36,990**[3]

1 Figures reported in accordance with IFRS accounting, i. e. fully consolidated activities are recognised in full, whereas activities in which we own minority shareholdings are generally not recognised.
2 Including production capacity not attributable to any of the energy sources mentioned (e. g. electricity from waste-to-energy plants).
3 Adjusted figure: now includes our Niederaussem E and F as well as Neurath C lignite units again, which were put back online in compliance with the German Substitute Power Station Act in October 2022.
4 Including insignificant capacity at RWE Supply & Trading.

Installed capacity based on renewables[1]	Offshore Wind		Onshore Wind		Solar		Hydro		Biomass		Total	
As of 31 December, MW	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
Germany	940	598	689	637	19	3	376	393	1	–	2,024	1,630
United Kingdom	2,529	1,672	803	803	–	–	78	84	55	55	3,466	2,615
Netherlands	–	–	383	331	21	17	11	11	742	742	1,157	1,100
Poland	–	–	497	425	17	1	–	–	–	–	514	426
Spain	–	–	488	447	89	45	–	12	–	–	577	504
Italy	–	–	514	488	–	–	–	–	–	–	514	488
Sweden	48	48	116	116	–	–	–	–	–	–	164	164
USA	–	–	3,874	3,313	321	125	–	–	–	–	4,195	3,438
Australia	–	–	–	–	249	249	–	–	–	–	249	249
Rest of the world	–	–	92	36	88	47	–	–	–	–	180	83
RWE Group	**3,517**	**2,318**	**7,455**	**6,596**	**804**	**486**	**465**	**500**	**798**	**797**	**13,039**	**10,697**

1 Figures reported in accordance with IFRS accounting, i.e. fully consolidated activities are recognised in full, whereas activities in which we own minority shareholdings are generally not recognised. Commercial rounding can result in inaccurate sum totals.

Marginal increase in carbon dioxide emissions. Last year, our power stations emitted 83 million metric tons of carbon dioxide. This is 2.1 million metric tons more than in 2021. The utilisation of our lignite-fired power stations was up considerably on 2021 due to the scarcity of gas. Our specific emissions, i.e. the amount of carbon dioxide emitted per megawatt hour of electricity generated, rose from 0.50 metric tons to 0.53 metric tons. In addition to higher generation volumes from coal, the significant reduction in production from zero-carbon nuclear energy came to bear here. The increase in our power generation from the climate-friendly energy sources wind and solar had a counteracting impact.

CO_2 emissions of our power stations Million metric tons	2022	2021	+/–
Hydro / Biomass / Gas	24.2	25.0	-0.8
of which:			
Germany	2.4	2.6	-0.2
United Kingdom	13.9	12.8	1.1
Netherlands	7.0	8.0	-1.0
Türkiye	0.9	1.6	-0.7
Coal / Nuclear	58.8	55.9	2.9
RWE Group	**83.0**	**80.9**	**2.1**

65.3 million metric tons of lignite produced. We procure most of the fuel we need to generate electricity on international trading markets. By contrast, lignite is sourced from proprietary opencast mines. In our Rhenish mining area west of Cologne, we produced 65.3 million metric tons of lignite last year. This was 2.7 million metric tons more than in 2021, owing to the increased power generation of our lignite power plants in response to the gas supply crisis. We used the lion's share, or 56.6 million metric tons, of the mined lignite to generate electricity. The remainder was dedicated to manufacturing refined products (e.g. lignite powder, hearth furnace coke and briquettes) and, to a limited extent, to generating process steam and district heat.

Electricity and gas sales down on previous year. In fiscal 2022, we sold 193,930 GWh of electricity and 39,479 GWh of gas. Most of these volumes are attributable to the company RWE Supply & Trading, which markets the electricity generated by our power stations externally and is in charge of the key account business: the company is assigned to the Supply & Trading segment. We sold 4 % less of our main product, electricity, than in 2021, in part owing to the slight decline in generation volumes. In addition, some companies we supply reduced energy consumption due to high prices. This was also the main reason why our gas sales were 14 % down on the year-earlier level.

Revenue reflects substantial increase in energy prices. Our external revenue amounted to €38,366 million as opposed to €24,571 million in the preceding year. These figures do not include natural gas tax or electricity tax. Despite marginally lower generation volumes, electricity revenue jumped by 51 % to €31,027 million. Gas revenue was more than twice as high as in 2021, totalling €4,633 million. Both of these developments can be traced back to price effects.

One key performance indicator that is of particular interest to ESG investors is the portion of our revenue accounted for by coal-fired generation and other coal products. In the fiscal year that just ended, this share was 17 % (previous year: 22 %).

External revenue[1] € million	2022	2021	+/–
Offshore Wind	1,401	727	674
Onshore Wind / Solar	2,232	2,330	–98
Hydro / Biomass / Gas	1,830	1,315	515
Supply & Trading	31,959	19,296	12,663
Other	–	4	–4
Core business	**37,422**	**23,672**	**13,750**
Coal / Nuclear	944	899	45
RWE Group (excl. natural gas tax / electricity tax)	**38,366**	**24,571**	**13,795**
Natural gas tax / electricity tax	203	235	–32
RWE Group	**38,569**	**24,806**	**13,763**

1 Some prior-year figures restated.

External revenue by product[1] € million	2022	2021	+/–
Electricity revenue	**31,027**	**20,521**	**10,506**
of which:			
Offshore Wind	1,377	727	650
Onshore Wind / Solar	2,165	2,113	52
Hydro / Biomass / Gas	1,323	877	446
Supply & Trading	25,958	16,540	9,418
Core business	**30,823**	**20,257**	**10,566**
Coal / Nuclear	204	264	–60
Gas revenue	**4,633**	**2,142**	**2,491**
Other revenue	**2,706**	**1,908**	**798**
RWE Group (excl. natural gas tax / electricity tax)	**38,366**	**24,571**	**13,795**

1 Some prior-year figures restated.

Adjusted EBITDA € million	2022	2021	+/-
Offshore Wind	1,412	1,110	302
Onshore Wind / Solar	827	258	569
Hydro / Biomass / Gas	2,369	731	1,638
Supply & Trading	1,161	769	392
Other, consolidation	-210	-107	-103
Core business	**5,559**	**2,761**	**2,798**
Coal / Nuclear	751	889	-138
RWE Group	**6,310**	**3,650**	**2,660**

At €6.3 billion, adjusted EBITDA clearly exceeds expectations. Our adjusted earnings before interest, taxes, depreciation and amortisation (adjusted EBITDA) amounted to €6,310 million. This is more than we had forecast. The outlook which was drawn up in February 2022 and published on pages 67 et seq. of the 2021 Annual Report envisaged a range of €3.6 billion to €4.0 billion. We raised this forecast in July 2022 to between €5.0 billion and €5.5 billion. This new range was, again, exceeded. The fact that we have performed better than expected is primarily due to the very good trading performance, favourable conditions on the electricity generation market and strong income from the short-term optimisation of power plant dispatch. Adjusted EBITDA posted by our core business amounted to €5,559 million. Our forecast in February envisaged this figure being between €2.9 billion and €3.3 billion. In the Coal / Nuclear segment, which does not form part of our core business, we recorded €751 million. We had forecast €650 million to €750 million.

Adjusted EBITDA at the Group level improved by 73% over the previous year. Besides the aforementioned factors, the substantial hit taken by the Onshore Wind / Solar segment in 2021 came to bear: an ice storm in Texas in February 2021 resulted in unscheduled outages, forcing us to fulfil existing electricity supply commitments through expensive purchases on the market. More information on this can be found on page 43 of the 2021 Annual Report.

The following developments were observed in the segments:

- **Offshore Wind:** At €1,412 million, adjusted EBITDA was within the forecast range of €1,350 million to €1,600 million. It recorded a 27% gain compared to 2021 (€1,110 million), in particular driven by new generation capacity being commissioned. Wind levels were below average at our offshore sites, but higher than in the prior year. Another contributing factor was that we took a majority stake in the Rampion wind farm in the UK as of 1 April 2021, which has been fully consolidated since then.

- **Onshore Wind / Solar:** In this segment, adjusted EBITDA totalled €827 million. On the back of improved margins, we were slightly above the range of €650 million to €800 million which we had forecast in February 2022. Compared to the previous year's figure, which was exceptionally low (€258 million) due to the ice storm in Texas, adjusted EBITDA more than tripled. In addition to the non-recurrence of this charge, the commissioning of new generation assets, more favourable wind conditions and margin improvements contributed to the positive development. A counteracting effect was felt from the fact that the year-earlier result contained book gains on the sale of majority interests in the Stella, Cranell, as well as East and West Raymond wind farms in Texas.

- **Hydro / Biomass / Gas:** Here, we registered adjusted EBITDA of €2,369 million, clearly exceeding the projected range of €700 million to €900 million. Due to the volatility of the market, we realised unusually high gains from the short-term optimisation of our power plant dispatch in the year under review. Generation margins also exceeded expectations. The aforementioned factors were the main reason why adjusted EBITDA more than tripled compared to 2021 (€731 million). Earnings shortfalls stemmed from the outage at the Dutch Claus C gas-fired power plant caused by steam turbine damage. Moreover, we received lower payments from the British capacity market.

- **Supply & Trading:** RWE Supply & Trading posted another very good performance in international energy trading. Adjusted EBITDA recorded by this segment totalled €1,161 million, easily surpassing the forecast range of €150 million to €350 million. This figure also clearly exceeded the year-earlier figure (€769 million). We also achieved unexpectedly strong income in the gas business. Charges resulted from an impairment of €748 million recognised for contracts relating to hard coal purchases from Russia (see page 38). We had considered this effect in the non-operating result in our reporting during the year. Now we recognise it in adjusted EBITDA.

- **Coal / Nuclear:** At €751 million, adjusted EBITDA was at the upper end of our forecast, which was attributable to unexpectedly good power plant utilisation. In spite of this, we closed the year down on the previous one (€889 million). This was largely due to the power station closures in line with Germany's coal and nuclear phaseouts (see page 44 of the 2021 Annual Report). The decommissioning of the Gundremmingen C nuclear power plant as of 31 December 2021 weighed particularly heavily on earnings. Cost savings and the short-term optimisation of our power plant dispatch had a positive impact.

Adjusted EBIT € million	2022	2021	+/–
Offshore Wind	836	636	200
Onshore Wind / Solar	370	–145	515
Hydro / Biomass / Gas	2,005	418	1,587
Supply & Trading	1,111	721	390
Other, consolidation	–210	–106	–104
Core business	**4,112**	**1,524**	**2,588**
Coal / Nuclear	456	661	–205
RWE Group	**4,568**	**2,185**	**2,383**

Adjusted EBIT more than twice as high as a year earlier. The RWE Group's adjusted EBIT advanced by €2,383 million to €4,568 million, clearly exceeding the range of €2.0 billion to €2.4 billion projected in February 2022. This increase was driven by the same factors benefiting adjusted EBITDA. The difference between these two key figures is that operating depreciation and amortisation, which totalled €1,742 million as opposed to €1,465 million in the previous year, is included in adjusted EBIT, but not in adjusted EBITDA.

Reconciliation to net income € million	2022	2021	+/–
Adjusted EBIT	**4,568**	**2,185**	**2,383**
Non-operating result[1]	–442	–226	–216
Financial result[1]	–3,411	–437	–2,974
Income before tax	**715**	**1,522**	**–807**
Taxes on income	2,277	–690	2,967
Income	**2,992**	**832**	**2,160**
of which:			
Non-controlling interests	275	111	164
Net income / income attributable to RWE AG shareholders	**2,717**	**721**	**1,996**

1 Newly defined key figures and adjusted prior-year figures (see commentary on page 44).

Reconciliation to net income dominated by exceptional effects. The reconciliation from adjusted EBIT to net income is characterised by extraordinary effects in the non-operating result and in relation to taxes on income, which – compared to the previous year – almost netted each other out. We present the development of the reconciliation items below.

Financial result[1] € million	2022	2021	+/–
Interest income	356	260	96
Interest expenses	–581	–317	–264
Net interest	**–225**	**–57**	**–168**
Interest accretion to non-current provisions	–149	–131	–18
Other financial result	–68	–38	–30
Financial result	**–442**	**–226**	**–216**

1 New indicator and some prior-year figures adjusted (see commentary on page 44); except for interest income in the prior year, all items in the table contain adjustments.

Our financial result amounted to – €442 million. This represents a €216 million deterioration compared to the previous year and is essentially attributable to adjusted net interest, which dropped by €168 million to – €225 million. The reasons were additional costs incurred to take out new lines of credit, the increase in bond volume and greater project financing needs. Furthermore, additional costs were incurred to pledge collateral in the energy trading business. The dividend on our 15 % stake in E.ON, which is included in net interest, amounted to €194 million, which was slightly higher than in 2021 (€186 million).

Non-operating result[1] € million	2022	2021	+/–
Adjustment items in EBIT	**–4,680**	**–650**	**–4,030**
of which:			
Disposal result	–	21	–21
Effects on income from the valuation of derivatives	–4,195	–503	–3,692
Other	–485	–168	–317
Adjustment items in the financial result	**1,269**	**213**	**1,056**
Non-operating result	**–3,411**	**–437**	**–2,974**

1 New definition – therefore, some prior-year figures have been adjusted (see commentary on page 44).

The non-operating result, in which we recognise certain items which are not related to operations or the period being reviewed, came to –€3,411 million (previous year: –€437 million). Material effects were recorded with regard to the following items:

- Effects on income from the valuation of derivatives totalled –€4,195 million (previous year: –€503 million). Such impacts are only temporary and are primarily due to the fact that, pursuant to IFRS, financial instruments used to hedge price risks are accounted for at fair value at the corresponding balance-sheet date, whereas the hedged underlying transactions are only recognised as a profit or loss when they are realised.

- In the 'other' line item, we reported a result of –€485 million (previous year: –€168 million). We took charges of €1,157 million and €239 million from additions to mining and restructuring provisions caused by the accelerated lignite phaseout. Moreover, inflation-driven cost increases led to accruals to mining and nuclear provisions. A positive effect was felt from the write-backs we performed on lignite power plants and opencast mines (€962 million) and on power stations in the Hydro / Biomass / Gas segment (€952 million) reflecting the more favourable earnings prospects in the generation business.

- Adjustments to the financial result totalled €1,269 million (previous year: €213 million). This high figure is due to the increase in the real discount rates used to calculate our nuclear and mining provisions. This coincides with the associated almost complete recognition in profit or loss of the reduction in the net present value of the obligations.

Income before tax amounted to €715 million (previous year: €1,522 million). In the year being reviewed, we recorded a tax gain of €2,277 million. This was due to write-backs on deferred tax assets for which valuation allowances had previously been made. The allowances were made because no profits are foreseeable in Germany or the Netherlands, with which we could have offset the deferred tax assets. Earnings prospects in these countries have since improved again.

At €275 million, non-controlling interests in income were much higher than in the preceding year (€111 million), above all due to a rise in income from offshore wind farms in which third parties hold minority interests. This mainly related to Rampion (400 MW), Humber Gateway (219 MW) and Triton Knoll (857 MW) in the United Kingdom. In addition, we have been fully consolidating Rampion since 1 April 2021 and thus stated the share in income attributable to the co-owners that hold a 49.9 % stake for the full reporting period in 2022.

The RWE Group's net income amounted to €2,717 million (previous year: €721 million). This corresponds to earnings per share of €3.93 (previous year: €1.07) which was calculated based on 691.2 million shares. The new shares from the conversion of the mandatory convertible bond issued to Qatar Holding LLC on 10 October 2022 are taken into account on a prorated basis as per IFRS. Earnings per share for 2021 had been calculated based on 676.2 million RWE shares.

Reconciliation to adjusted net income[1] € million	2022	2021	+/-
Income before financial result and taxes	-112	1,535	-1,647
Adjustment to EBIT	4,680	650	4,030
Adjusted EBIT	**4,568**	**2,185**	**2,383**
Financial result	827	-13	840
Adjustment items in the financial result	-1,269	-213	-1,056
Taxes on income	2,277	-690	2,967
Adjustments to taxes on income to a tax rate of 15%	-2,896	396	-3,292
Non-controlling interests	-275	-111	-164
Adjusted net income	**3,232**	**1,554**	**1,678**

1 Some prior-year figures restated (see commentary on page 44).

Adjusted net income higher than expected. Adjusted net income came to €3,232 million. Due to the unexpectedly positive earnings of our operating activities, it was above the guided range of €1.3 billion to €1.7 billion. The prior-year figure of €1,554 million was also exceeded. To calculate adjusted net income, first we deducted the non-operating result on the reconciliation statement. Then, instead of applying the actual tax rate we used a budgeted rate of 15% which was not impacted by exceptional effects (see page 26).

Capital expenditure on property, plant and equipment and on intangible assets[1] € million	2022	2021	+/-
Offshore Wind	1,029	1,683	-654
Onshore Wind / Solar	1,580	1,404	176
Hydro / Biomass / Gas	424	294	130
Supply & Trading	42	47	-5
Other, consolidation	-	2	-2
Core business	**3,075**	**3,430**	**-355**
Coal / Nuclear	228	259	-31
RWE Group	**3,303**	**3,689**	**-386**

1 Table only shows cash investments.

Capital expenditure on financial assets[1] € million	2022	2021	+/-
Offshore Wind	847	27	820
Onshore Wind / Solar	256	27	229
Hydro / Biomass / Gas	68	6	62
Supply & Trading	9	20	-11
Other, consolidation	1	-	1
Core business	**1,181**	**80**	**1,101**
Coal / Nuclear	-	-	-
RWE Group	**1,181**	**80**	**1,101**

1 Table only shows cash investments.

Marked increase in capital expenditure on renewable energy. In the past fiscal year, our capital spending totalled €4,484 million (previous year: €3,769 million). The funds were mostly used for our Offshore Wind (42 %) and Onshore Wind / Solar (41 %) segments.

At €3,303 million (previous year: €3,689 million), capital expenditure on property, plant and equipment and intangible assets was significant. Due to delays resulting from supply chain disruptions, however, it was lower than planned. The single-largest expenditure item was the construction of the Kaskasi offshore wind farm (342 MW) near Heligoland, Germany, all turbines of which have been online since the end of 2022. Substantial funds were also dedicated to the Sofia wind farm (1,400 MW) in the UK North Sea, which is scheduled for completion in 2026. Further major investment recipients were wind and solar projects in the USA as well as the construction of the gas-fired power plant in Biblis, which will contribute to stabilising the German power grid from 2023 onwards.

We spent €1,181 million on financial assets (previous year: €80 million). Of this sum, €743 million was used to make a capital contribution to our US joint venture with National Grid Ventures. The funds were used to pay a one-off lease fee for a site in the New York Bight where we intend to build offshore wind assets. Further major spending items were the acquisition of Polish project developer Alpha Solar and a capital contribution to the joint venture with Greece's leading energy utility Public Power Corporation (PPC) established at the end of 2021.

In the year under review, 83 % of our capital expenditure was taxonomy-aligned. This means that these funds were spent on activities classified as sustainable according to the EU Taxonomy Regulation. This percentage is based on total investments of €4,231 million. The difference to the amount stated above (€4,484 million) results from the fact that non-cash transactions are also taxonomy-relevant whereas capital expenditure on financial assets is not considered.

Workforce[1]	31 Dec 2022	31 Dec 2021	+/–
Offshore Wind	1,663	1,277	386
Onshore Wind / Solar	2,509	2,146	363
Hydro / Biomass / Gas	2,691	2,606	85
Supply & Trading	1,965	1,804	161
Other[2]	499	467	32
Core business	**9,327**	**8,300**	**1,027**
Coal / Nuclear	8,983	9,946	–963
RWE Group	**18,310**	**18,246**	**64**

1 Converted to full-time positions.
2 This item exclusively comprises employees of the holding company RWE AG.

Personnel increase in renewables – job cuts in lignite. As of 31 December 2022, the RWE Group had 18,310 people on its payroll, of which 12,992 were employed in Germany and 5,318 worked abroad. Part-time positions were considered in these figures on a pro-rata basis. Headcount was essentially unchanged compared to the end of the prior year. We recorded a significant decline (– 963) in the Coal / Nuclear segment where many employees accepted early retirement offers as part of the German coal phaseout. Conversely, we increased the workforce in our core business in order to accelerate our growth, adding 1,027 new positions last year. Large-scale projects involving the construction of new wind and solar farms played an important role in this context.

Personnel figures do not include apprentices or trainees. At the end of 2022, 742 young adults were learning a profession at RWE, compared to 785 in the previous year.

2.7 Financial position and net worth

Our financial position and net worth is fundamentally solid. Despite once again investing billions in the expansion of renewables in 2022, our net debt remained below zero. As of the balance-sheet date, RWE posted net cash in the amount of €1.6 billion. We cover most of our financing needs with earnings from our operating activities. In addition, we have a wide range of tools to procure debt capital. This past year, we managed to increase our debt financing headroom by upping our credit line volume and adding a second Commercial Paper Programme. The Group is thus much better positioned to provide for greater short-term liquidity coverage in the event of turbulence on the energy markets.

How we procure funds. Our ambitious growth strategy means that we require significant financial resources to be available long term. However at times, we will also require substantial liquidity at short notice, for example as collateral for commodity futures. RWE's most important source of financing are our cash flows from operating activities. Debt capital procurement is also an integral component and we have a range of tools at our disposal to this end:

- Our Debt Issuance Programme (DIP) gives us latitude in raising debt capital for the long term. It allows us to issue senior bonds with a total face value of up to €10 billion. The mandatory convertible bond issued to Qatar Holding LLC and our two hybrid bonds are not part of the programme. In late 2022 and early 2023, we issued bonds in the amount of €4.25 billion within the framework of our DIP. By the end of February 2023, we had used €6.1 billion of the programme's headroom. We plan to bolster our DIP to ensure long-term access to the necessary debt capital to fund our growth investments.
- For short-term refinancing, we have two Commercial Paper Programmes, a European programme (ECP) and – since late 2022 – an American one (USCP). The ECP allows us to raise funds equivalent to up to €5 billion on the European money market. We largely exhausted this funding volume during the past fiscal year. The volume of commercial paper outstanding fluctuated between €2.4 billion and €3.8 billion in 2022. The USCP allows us to issue commercial paper to American investors with a total value of up to US$3 billion. We have been utilising this programme since February 2023.
- To secure our liquidity, we also have access to three syndicated credit lines totalling €8 billion, which are extended by a consortium of 27 international banks. We secured the first credit line in the amount of €3 billion back in April 2019. It is due to expire in April 2026. The second has a volume of €2 billion and replaced a credit line which expired in April 2022; it will also remain at our disposal until April 2026. In light of increased volatility in energy prices and the related rise in liquidity requirements to hedge forward contracts, we secured a third credit line in March 2022, which increases our financing headroom by another €3 billion. It was initially going to expire after a year, however, we exercised the option to extend it for six months and reserve the right to do so for a second time. At our request, the conditions of all three credit lines are linked to sustainability criteria. Among other things, the conditions depend on the development of the following three indicators: the share of renewables in RWE's generation portfolio, the CO_2 intensity of our plants and the percentage of our capex that is classified as sustainable in accordance with the EU taxonomy regulation. We have set goals for all three of these criteria. If we do not achieve them, we would have to pay higher interest and commitment fees. Half of the additional expenses would be directed to non-profit organisations.

Cash flow statement € million	2022	2021	+/–
Funds from operations	5,306	7,103	–1,797
Change in working capital	–2,900	171	–3,071
Cash flows from operating activities	**2,406**	**7,274**	**–4,868**
Cash flows from investing activities	**–9,892**	**–7,738**	**–2,154**
Cash flows from financing activities	**8,615**	**1,457**	**7,158**
Effects of changes in foreign exchange rates and other changes in value on cash and cash equivalents	34	58	–24
Total net changes in cash and cash equivalents	**1,163**	**1,051**	**112**
Cash flows from operating activities	2,406	7,274	–4,868
Minus capital expenditure	–4,484	–3,769	–715
Plus proceeds from divestitures / asset disposals	110	1,057	–947
Free cash flow	**–1,968**	**4,562**	**–6,530**

Operating cash flow significantly below the previous year at €2.4 billion. Cash flows from operating activities, the RWE Group's most important source of finance, amounted to €2,406 million in 2022. Despite significantly improving our operating income, we fell far short of the previous year's high level (€7,274 million). This was largely due to the fact that we paid more variation margins for commodity derivatives than we received, following a high positive net figure in 2021. These margins are sureties for exchange-traded futures contracts pledged during the term of the contracts. We recognise the resulting change in liquidity in operating cash flow, which was also burdened by the fact that we purchased and stored gas at extremely high market prices. The cash outflow was associated with an increase in working capital. Another reason for the decline in cash flow was that last year's figure contained a one-off payment of €880 million, which the government issued as compensation for the German nuclear phaseout.

Investing activities led to a cash outflow of €9,892 million (previous year: €7,738 million). We made significant investments in securities in the year under review. Added to this was capital expenditure on property, plant and equipment and financial assets, which came to €4,484 million (see page 56).

Our financing activities brought in a cash inflow of €8,615 million (previous year: €1,457 million). The significant increase is, inter alia, attributable to substantially boosted proceeds on the issuance of bonds. Taking the mandatory convertible bond issued to Qatar Holding LLC into account, the issuance volume in 2022 amounted to €5.7 billion. On balance, we also reported revenue generated from initial margins and collaterals. Unlike variation margins, these sureties are reported in cash flows from financing activities. In 2021, they had been associated with significant cash outflows. The redemption of commercial paper and short-term bank loans in the fiscal year led to cash outflows. Dividend payments to RWE shareholders and minority shareholders totalled €913 million, compared to €730 million in the previous year.

On balance, the aforementioned cash flows from operating, investing and financing activities increased our cash and cash equivalents by €1,163 million.

Cash flows from operating activities, less capital expenditure, plus proceeds from divestments and asset disposals, results in free cash flow. In the year under review, this figure amounted to –€1,968 million, down on the high prior-year figure (€4,562 million).

Net cash / net debt[1] € million	31 Dec 2022	31 Dec 2021	+/–
Cash and cash equivalents	6,988	5,825	1,163
Marketable securities	13,730	8,347	5,383
Other financial assets	8,543	12,403	–3,860
Financial assets	**29,261**	**26,575**	**2,686**
Bonds, other notes payable, bank debt, commercial paper	–15,621	–10,704	–4,917
Hedging of bond currency risk	8	–9	17
Other financial liabilities	–5,382	–7,090	1,708
Financial liabilities	**–20,995**	**–17,803**	**–3,192**
Plus 50 % of the hybrid capital stated as debt	299	290	9
Net financial assets	**8,565**	**9,062**	**–497**
Provisions for pensions and similar obligations	–900	–1,934	1,034
Surplus of plan assets over benefit obligations	680	459	221
Provisions for nuclear waste management	–5,704	–6,029	325
Provisions for dismantling wind farms	–1,011	–1,198	187
Net cash (+) / net debt (–)	**1,630**	**360**	**1,270**

1 Mining provisions are not included in net debt. The same holds true for the assets which we attribute to them. At present, this includes our 15 % stake in E.ON and our claim for state compensation for the German lignite phaseout in the amount of €2.6 billion.

€1,630 million in net cash. On the balance-sheet date, the net cash (+) / net debt (–) item was once again positive. At €1,630 million it was in fact higher than last year (€360 million). This rise was largely attributable to the issuance of a mandatory convertible bond to Qatar Holding LLC, which caused equity to rise in accordance with IFRS, despite the fact that it had not yet been converted into RWE shares at the balance-sheet date. In addition, provisions declined, particularly for pensions and similar obligations. This was due to the fact that the discount rates we use to calculate the present value of obligations increased as a result of market developments. The interest rates used to calculate pension provisions amounted to 4.2 % for Germany and 4.9 % for the UK, compared to 1.1 % and 1.8 % last year. A market-induced decrease in the plan assets we use to cover major portions of our pension obligations triggered an increase in provisions. Conversely, negative free cash flow and the dividend payments to RWE shareholders weighed on net financial assets.

Leverage factor below zero. One of our key management parameters is the ratio of net debt to the adjusted EBITDA of the core business, also referred to as the leverage factor. We set the upper limit for the leverage factor at 3.0 in order to secure our financial flexibility. On the balance-sheet date, this indicator was below zero. However, it should increase in the medium term, above all due to growth investments in our green core business, which we will also finance using debt capital.

Significantly reduced off-balance-sheet obligations from fuel purchases. Net debt does not include our off-balance-sheet obligations, which largely stem from long-term purchase agreements for commodities. As of the balance-sheet date, our payment obligations from material fuel procurement contracts amounted to €4.5 billion (previous year: €22.3 billion). In relation to electricity procurement, they amounted to €7.2 billion (previous year: €7.1 billion). The figures are based on assumptions regarding the prospective development of commodity prices. Our contractual commitments for the acquisition of property, plant and equipment remained largely constant at €5.7 billion versus last year. Further off-balance-sheet obligations result, inter alia, from liabilities for pension commitments that employees of our former subsidiary innogy had earned up to its IPO in 2016.

Group balance sheet structure	31 Dec 2022		31 Dec 2021	
	€ million	%	€ million	%
Assets				
Non-current assets	42,286	30.5	38,863	27.3
of which:				
Intangible assets	5,668	4.1	5,884	4.1
Property, plant and equipment	23,749	17.1	19,984	14.0
Current assets	96,262	69.5	103,446	72.7
of which:				
Trade accounts receivable	9,946	7.2	6,470	4.5
Derivatives, other receivables and other assets	61,035	44.1	79,626	56.0
Marketable securities	13,468	9.7	8,040	5.6
Assets held for sale	619	0.4	657	0.5
Total	**138,548**	**100.0**	**142,309**	**100.0**

	31 Dec 2022		31 Dec 2021	
	€ million	%	€ million	%
Equity and liabilities				
Equity	29,279	21.1	16,996	11.9
Non-current liabilities	29,584	21.4	28,306	19.9
of which:				
Provisions	15,595	11.3	16,943	11.9
Financial liabilities	9,789	7.1	6,798	4.8
Current liabilities	79,685	57.5	97,007	68.2
of which:				
Provisions	6,489	4.7	4,268	3.0
Financial liabilities	11,214	8.1	10,996	7.7
Trade accounts payable	7,464	5.4	4,428	3.1
Derivatives and other liabilities	54,518	39.3	77,315	54.4
Liabilities held for sale	–	–	–	–
Total	**138,548**	**100.0**	**142,309**	**100.0**

Equity ratio up by 9.2 percentage points to 21.1 %. In our consolidated financial statements dated 31 December 2022, we reported a balance-sheet total of €138.5 billion. This was slightly lower than last year (€142.3 billion). The ongoing bullish sentiment on the electricity and fuel markets is reflected in our elevated commodity derivative positions. However, they failed to reach the level achieved in 2021: they dropped by €15.7 billion to €48.7 billion on the assets side and by €23.5 billion to €52.7 billion on the equity and liabilities side of the balance sheet. Other significant changes versus 2021 concerned our marketable securities portfolio, which increased by €5.4 billion. Property, plant and equipment rose by €3.8 billion. One reason for this was that we recognised €1.9 billion in write-backs in relation to power plants and opencast mines. The equity and liabilities side of the balance sheet increased by €12.3 billion to €29.3 billion. In addition to the changes to the derivative positions and the write-backs, the issuance of a mandatory convertible bond to Qatar Holding LLC in the amount of €2.4 billion also came to bear. The share of equity in total assets (equity ratio) increased by 9.2 percentage points to 21.1 %.

2.8 Notes to the financial statements of RWE AG (holding company)

The financial statements of RWE AG are largely influenced by the business performance of its subsidiaries. The profit transfers of these companies declined in comparison to 2021. This was more than compensated for by a write-back we recognised in relation to our stake in RWE Power, due to more favourable earnings prospects in the generation business. This move was also instrumental in achieving a higher net profit of €1.3 billion for the year. Our distributable profit, which amounted to €670 million, reflects the intended distribution to RWE shareholders: we plan to propose a dividend of €0.90 per share to the Annual General Meeting taking place in May 2023.

Balance sheet of RWE AG (abridged) € million	31 Dec 2022	31 Dec 2021	+/-
Assets			
Financial assets	19,174	17,866	1,308
Accounts receivable from affiliated companies	24,052	7,922	16,130
Other accounts receivable and other assets	306	616	-310
Marketable securities and cash and cash equivalents	15,713	11,709	4,004
Total assets	**59,245**	**38,113**	**21,132**
Equity and liabilities			
Equity	9,091	8,359	732
Provisions	3,067	2,245	822
Accounts payable to affiliated companies	35,857	18,743	17,114
Other liabilities	11,230	8,766	2,464
Total equity and liabilities	**59,245**	**38,113**	**21,132**

Income statement of RWE AG (abridged) € million	2022	2021	+/-
Income from financial assets	1,202	378	824
Net interest	-803	318	-1,121
Other income and expenses	818	132	686
Taxes on income	118	280	-162
Net profit	**1,335**	**1,108**	**227**
Transfer to other retained earnings	-665	-499	-166
Distributable profit	**670**	**609**	**61**

Financial statements in accordance with German commercial law. RWE AG prepares its financial statements in compliance with the rules set out in the German Commercial Code and the German Stock Corporation Act. The financial statements are submitted to Bundesanzeiger Verlag GmbH, located in Cologne, Germany, which publishes them in the Company Register. They are available on the internet at www.rwe.com/financial-reports.

Assets. RWE's annual financial statements dated 31 December 2022 record €59.2 billion in total assets. This is significantly higher than the previous year (€38.1 billion). Accounts receivable and payable from affiliated companies registered a significant rise. This was mainly due to internal refinancing, which involved RWE AG taking on a subsidiary's receivables from RWE Renewables, indebting itself in the same amount with the subsidiary. The issuance of the mandatory convertible bond to Qatar Holding LLC played a part in increasing total assets: proceeds from the issue were allocated to the assets side of the balance sheet whilst the liability toward the subsidiary issuing the bond impacted the equity and liabilities side. In addition, the balance-sheet items 'marketable securities and cash and cash equivalents' and 'other liabilities' increased, which was, inter alia, due to our bonds issued in 2022 (see page 19). At €9,091 million, RWE AG's equity rose by €732 million

versus last year's figure. The equity ratio dropped by 6.6 percentage points to 15.3 %. The increase in equity due to the mandatory convertible bond issued to Qatar Holding LLC is not yet included in the figures. In this regard, the regulations pursuant to German commercial law are different than the IFRS rules for the consolidated financial statements. When the bond is converted in March 2023, equity will grow by €2.4 billion.

Financial position. RWE AG has a solid economic position with high levels of cash and cash equivalents and a number of financing tools at its disposal that it can use flexibly. Accordingly, our long-term credit ratings from Moody's (Baa2) and Fitch (BBB+) are classified as 'investment grade'. Last year, both these rating agencies reaffirmed their positive assessments. You can find detailed information on RWE's financial situation on pages 57 et seqq.

Earnings position. RWE AG's earnings position improved compared to 2021. The main items on the income statement developed as follows:

- Income from financial assets rose by €824 million to €1,202 million. The main contributing factor here was the write-back recognised in relation to the stake in RWE Power, due to more favourable earnings prospects in the generation business. Financial burdens from profit- and loss-pooling agreements with subsidiaries also came to bear, however. For example, RWE AG absorbed a considerable loss from RWE Power, which had to significantly adjust its mining provisions upwards due to the decision to expedite the lignite phaseout to 2030 and inflationary cost rises. Only last year, RWE Power had transferred a profit. Our subsidiary RWE Nuclear also closed the financial year at a loss, despite posting a positive result in 2021 due to the compensation paid for the nuclear phaseout. By contrast, RWE Generation's profit transfer increased substantially. This was due to write-backs recognised in relation to stakes in Dutch and British generation companies.

- Net interest decreased by €1,121 million to – €803 million. This was in part due to a decline in capital gains from the management of plan assets used to cover our pension obligations.

- The 'other income and expenses' line item improved by €686 million to €818 million. In the year under review – as in 2021 – we recognised write-backs for financial accounts receivable from a Dutch subsidiary. This reversed impairments in previous years.

- The presented earnings figures and tax income of €118 million (previous year: €280 million) led to a net profit of €1,335 million. Compared to 2021, we were therefore able to achieve an increase of €227 million.

- The distributable profit of €670 million corresponds to the proposed dividend payment of €0.90 per share to our shareholders. The new shares resulting from the conversion of the mandatory convertible bond issued to Qatar Holding LLC on 10 October 2022 are taken into account here.

Outlook for 2023. RWE AG's earnings largely depend on the business performance of its subsidiaries. Our current assessment for 2023 makes us confident that net profit will provide the necessary headroom for the intended dividend of €1.00 per share. It will probably remain at around the same level as in 2022.

Corporate governance declaration in accordance with Sections 289f and 315d of the German Commercial Code. On 15 February 2023, the Executive Board and the Supervisory Board of RWE AG issued its Corporate Governance Declaration in accordance with Sections 289f and 315d of the German Commercial Code. The declaration contains the Corporate Governance Report and has been published at www.rwe.com/corporate-governance-declaration.

2.9 Outlook

We are confident that we will be able to carry our good earnings position through into 2023. As things stand, we anticipate adjusted EBITDA of €5.8 billion to €6.4 billion. For our core business, we expect a figure between €4.8 billion and €5.4 billion. The acquisition of Con Edison Clean Energy Businesses on 1 March 2023 and the commissioning of new generation capacities will have a positive impact on earnings. We also expect the utilisation of our wind farms to improve due to better weather conditions. Conversely, our energy trading income and earnings from the short-term optimisation of our power plant dispatch are likely to fall well below the high levels seen in 2022. Moreover, the revenue cap may lead to tangible earnings shortfalls.

Gloomy economic prospects in RWE's core markets. The war in Ukraine and high inflation will continue to weigh heavily on the global economy in 2023. The German Council of Economic Experts expects global growth to be around 2 % (source: Annual Report 2022 / 2023). For the eurozone, it puts this figure at 0.3 %. The outlook for Germany is even more subdued: the Council expects the gross domestic product of the largest economy in the currency union to drop by 0.2 %. High energy prices are expected to play a part in limiting growth. According to estimates from the Council, the Netherlands should scrape by with a moderate increase of 0.6 %, whereas economic output in our most important non-EU market, the UK, is likely to stagnate. For the USA, the experts project growth of 0.4 %.

Decreased power consumption on the cards. Our projections for power consumption during the current year are based on the above economic outlook. We also predict energy saving measures to continue, particularly in Europe. In light of these factors, electricity demand in Germany, the Netherlands, the UK and the USA should be 1 % to 4 % lower than in 2022.

Forecast € million	2022 actual	Outlook for 2023
Adjusted EBITDA	6,310	5,800–6,400
of which:		
Core business	5,559	4,800–5,400
of which:		
Offshore Wind	1,412	1,400–1,800
Onshore Wind / Solar	827	1,100–1,500
Hydro / Biomass / Gas	2,369	1,750–2,150
Supply & Trading	1,161	300–600
Coal / Nuclear	751	800–1,200
Adjusted EBIT	4,568	3,600–4,200
Adjusted net income	3,232	2,200–2,700

Adjusted EBITDA in 2023: range of €5.8 billion to €6.4 billion expected. We are confident that we will be able to pick up where we left off last year in terms of our earnings position. The Group's adjusted EBITDA in 2023 is expected to range between €5,800 million to €6,400 million (previous year: €6,310 million). For our core business, we forecast a figure between €4,800 million and €5,400 million (previous year: €5,559 million). The acquisition of Con Edison Clean Energy Businesses on 1 March 2023 and the commissioning of new wind and solar farms will have a positive impact on earnings. We also assume wind conditions will return to normal levels, which would be associated with better utilisation of our wind farms versus 2022. Conversely, income from the short-term optimisation of our power plant dispatch and from energy trading will likely fail to meet the high level achieved last year. Furthermore, we expect the European revenue cap to weigh heavily on earnings. Outside our core business in our Coal / Nuclear segment, adjusted EBITDA will likely improve due to better margins.

Adjusted EBIT should fall within a range of €3,600 million to €4,200 million (previous year: €4,568 million), with operating depreciation and amortisation at approximately €2,200 million. We expect adjusted net income to be between €2,200 million to €2,700 million (previous year: €3,232 million).

Our outlook broken down by segment is as follows:

- **Offshore Wind:** Adjusted EBITDA in this business is expected to total between €1,400 million and €1,800 million (previous year: €1,412 million). The first full year of operation of our Triton Knoll and Kaskasi wind farms will have a positive impact on earnings. We also expect both better asset utilisation due to improved weather conditions as well as higher realised electricity prices. This is juxtaposed by national electricity revenue caps and rising costs for the development of growth projects.

- **Onshore Wind / Solar:** Adjusted EBITDA in this segment is forecast at €1,100 million to €1,500 million. This would see us closing 2023 significantly above the previous year (€827 million), mainly driven by the additional earnings from Con Edison Clean Energy Businesses which has been fully consolidated since 1 March 2023. New-build facilities will also help boost EBITDA. In a similar vein to our Offshore Wind segment, we expect improved weather conditions and higher realised electricity prices, but also counteractive effects from national revenue caps and rising expenditure for project development.

- **Hydro / Biomass / Gas:** Here, adjusted EBITDA will most likely not match last year's high level (€2,369 million). We project a figure in the €1,750 million to €2,150 million range. Realised electricity prices and income from the short-term optimisation of our power plant dispatch is expected to be lower than the high levels seen in 2022. We expect that the commissioning of our grid stabilisation plant in Biblis and the addition of Magnum, the Dutch gas-fired power plant we acquired on 1 February 2023, will have a positive impact.

- **Supply & Trading:** Assuming business develops normally, adjusted EBITDA in this segment should range between €300 million and €600 million. In this case, it would fall clearly below the exceptional level registered in 2022 (€1,161 million).

- **Coal / Nuclear:** Here, adjusted EBITDA will likely rise to between €800 million and €1,200 million (previous year: €751 million), despite the shutdown of our Emsland nuclear plant planned for April 2023. Higher margins from lignite-based power generation will be the deciding factor here.

Capital expenditure on property, plant and equipment markedly up on last year. In comparison to 2022 (€3,303 million), we plan on substantially increasing our property, plant and equipment and intangible asset investments. We will focus our other investments on wind and solar power projects as well as batteries in the USA and Europe. Considerable funds will be allocated to building the Sofia offshore wind farm in the British North Sea. In addition to property, plant and equipment investments, we will be investing significant sums in financial assets, not least due to the acquisition of Con Edison Clean Energy Businesses.

Leverage factor to stay below upper limit of 3.0. As explained on page 59, we reported negative net debt as at 31 December 2022. The ratio of net debt to adjusted EBITDA for our core business (leverage factor) was therefore below zero. However, it will probably rise in the long run as we plan to partially finance our growth investments by raising debt capital. The completion of our acquisition of Con Edison Clean Energy Businesses, in particular, will have a debt-increasing effect. At the same time, we remain confident that at the end of the current year the leverage factor will stay well below 3.0, which is the upper limit we set for it.

Dividend for fiscal 2023. The Executive Board of RWE AG aims to pay a dividend of €1.00 per share for the 2023 financial year. This is an increase of €0.10 over the dividend proposal for 2022.

2.10 Development of risks and opportunities

The last year has shown just how fast framework conditions in the energy sector can change. Examples include massive price spikes on energy markets and the new revenue caps on electricity production in Europe. Thanks to our lignite exit agreement with the government, there has, however, also been progress in terms of planning security. Energy supply is a long-term business. Companies like RWE need a reliable framework, but also have to be able to respond quickly to changes, managing their impact effectively. Our professional risk management is essential in this regard. 'Professional' not only means systematically measuring, assessing and managing our risks. It also means identifying and leveraging opportunities.

RWE's controlling and risk management system. Our internal controlling and risk management system enables the early detection and management of various business-related risks. It also helps us identify and leverage opportunities. Our analyses and actions relate to processes that impact the success of our business. They also take sustainability matters into consideration. To ensure our financial reporting is accurate and reliable, we use an accounting-related internal control system (see pages 73 et seq.) and also rely on a compliance management system (CMS), designed to ensure compliance with the regulations and standards applicable to RWE (see page 74).

Internal Audit regularly verifies the quality and functionality of our controlling and risk management system. Such assessments were also carried out in 2022 and gave no cause to doubt the appropriateness and effectiveness of our controlling and risk management system. The Executive Board of RWE AG confirmed the Group's risk bearing capacity by way of a resolution dated 23 November 2022.

Distribution of risk management tasks. Responsibility for risk and opportunity management within the Group lies with the parent company RWE AG. Its Executive Board monitors and manages the Group's overall risk. In addition, it determines the general risk appetite of RWE and defines upper limits for single risk positions. At the level below the Executive Board, the Controlling & Risk Management Department has the task of applying and constantly refining the risk management system. It derives detailed limits for the individual business fields and operating units from the risk caps set by the Executive Board. Its tasks also include checking that the risks have been identified in full and are plausible before aggregating them. In so doing, it receives support from the Risk Management Committee, which is composed of the heads of the following five RWE AG departments: (1) Controlling & Risk Management (Chair), (2) Finance & Credit Risk, (3) Accounting, (4) Legal, Compliance & Insurance, and (5) Strategy & Sustainability. The Controlling & Risk Management Department provides the Executive Board and the Supervisory Board of RWE AG with regular reports on the company's risk exposure.

A number of additional organisational units and committees have been entrusted with risk management tasks:

- The Group's financial risks and credit risks are managed by the Finance & Credit Risk Department of RWE AG.

- The Accounting Department ensures that financial reporting is free of material misstatements. It has an accounting-related internal control system for this purpose. A committee consisting of officers from Accounting and other departments of relevance to accounting assists in securing the quality of financial reporting.

- To prevent violations of statutory regulations and other norms, we have established a compliance management system, overseen by the Chief Compliance Officer. We also employ Group compliance officers, who dedicate their time to ensuring Group-wide rules and regulations are implemented uniformly.

- Risks from changes in commodity prices are monitored by RWE Supply & Trading. The company not only manages these risks in relation to energy trading but also with regard to electricity generation and our gas business.

- The Commodity Strategy Group, established in 2022, is responsible for the strategic management of the commodity positions we take in relation to our power generation activities. RWE AG is represented by the Chief Executive Officer, the Chief Financial Officer and the Head of Controlling & Risk Management. The management team of RWE Supply & Trading is also represented in the committee.

- The Commodity Management Committee is responsible for implementing the risk management strategies developed by the aforementioned committee. This expert panel consists of the CFO of RWE AG, the Management Team of RWE Supply & Trading and a representative of the Controlling & Risk Management Department.

- Risks relating to data availability and protection, and the security of IT systems are overseen by the Group Cyber Security Department of RWE AG. It analyses risk exposure and ensures that our Group companies implement necessary safeguards.

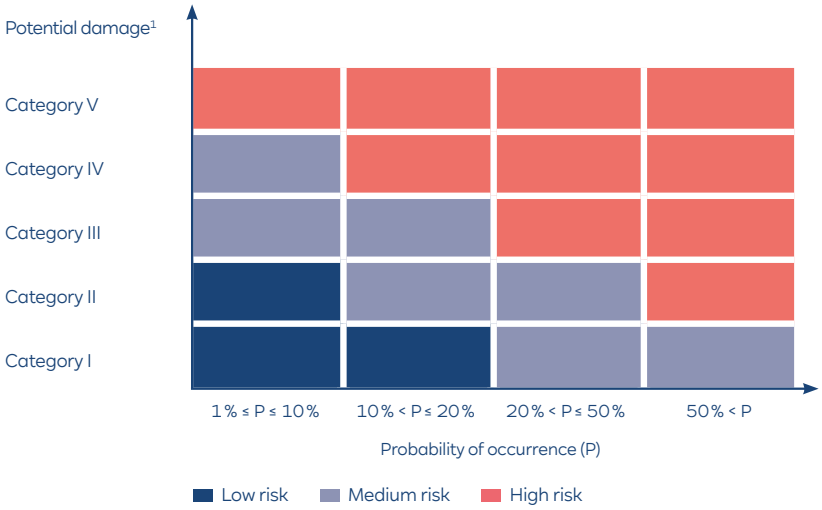
Under the expert management of the aforementioned organisational units, RWE AG and its subsidiaries are responsible for identifying risks early, assessing them correctly and managing them in compliance with corporate standards.

Risk identification and assessment. Risks and opportunities are defined as negative or positive deviations from expected figures. Their management is an integral and continuous part of operating processes. We assess risks every six months, using a bottom-up analysis. We also monitor risk exposure between the regular survey dates. The Executive Board of RWE AG is immediately notified of any material changes. The executive and supervisory bodies are updated on the Group's risks once a quarter.

Our risk analysis normally covers the three-year horizon of our medium-term plan, but can extend beyond that in individual cases. We measure the potential damage based on the possible effects on net income, liquidity, net debt and equity. In doing so, we take hedges into account.

We display the material risks using a matrix (see next page) in which they are categorised by potential damage and probability of occurrence. Where possible, we aggregate risks that share the same cause to one single risk. To clearly assign them to the matrix fields, we have established damage potential thresholds, which are oriented towards the RWE Group's ability to bear risks. They are presented in the table below the matrix. Depending on their position in the matrix, we distinguish between low, medium and high risks. Through this systematic risk identification, we determine whether there is a need for action and initiate measures to mitigate the risks if necessary.

RWE risk matrix



Potential damage[1] € million	**Earnings risks** Potential impact on net income (X)	**Indebtedness / equity risks** Potential impact on liquidity, net debt and / or equity (Y)
Category V	8,000 ≤ X	8,000 ≤ Y
Category IV	1,500 ≤ X < 8,000	4,000 ≤ Y < 8,000
Category III	600 ≤ X < 1,500	2,000 ≤ Y < 4,000
Category II	300 ≤ X < 600	1,000 ≤ Y < 2,000
Category I	X < 300	Y < 1,000

1 Aggregated over the planning horizon.

Risk classes	Classification of the highest single risk	
	March 2023	March 2022
Market risks	High	Medium
Regulatory and political risks	High	High
Legal risks	Low	Low
Operational risks	Medium	Medium
Financial risks	Medium	Medium
Creditworthiness of business partners	Medium	Medium
Other risks	Low	Low

Main risks for the RWE Group. Depending on their causes, our risks can be divided into seven classes, which are shown in the table above. The highest individual risk determines the classification of the risk of the entire risk class. Our classification of risks reflects the situation in March 2023. The following are the most important changes that occurred compared to our assessment in the previous year (see pages 70 et seqq. of the 2021 Annual Report):

- We have upgraded the classification of our market risks from 'medium' to 'high'. As the elevated energy prices helped improve our earnings prospects, we are now exposed to greater downside deviations if prices drop again.

- In October 2022, we reached an agreement with the German government and the state of North Rhine-Westphalia on the framework conditions for bringing the lignite phaseout forward to 2030. This gives us more planning certainty for our activities in the Rhenish region. Nevertheless, we continue to classify our regulatory and political risks as 'high'. This assessment was triggered by recent state intervention in the energy market, above all the introduction of an electricity revenue cap in the EU and UK. It cannot be ruled out that the revenue cap will be prolonged and / or lowered. In the long run, we also see the risk of a fundamental change in the electricity market's design, leaning towards increased price regulation by the state.

In this section, we provide commentary on the main risks and opportunities we have identified for 2023 and the following two years. We will also explain what measures have been taken to counter the threat of negative developments.

- **Market risks.** In most of the countries in which we are active, the energy sector is characterised by the free formation of prices. This presents both opportunities and risks. Prices quoted on our key European electricity forward markets reached new heights in 2022 and are still inflated. The situation is likely to remain tense for some time, particularly due to the continued absence of Russian fuel imports. We have therefore upped our planning estimates related to future electricity quotations. The risk of suffering a setback should prices drop has thus become greater. We therefore classify our market risks as 'high'.

  Should power prices decline, we may be forced to recognise impairments on plants and mines. In fiscal 2022, €1.9 billion in write-backs were applied to these activities, due to improved market conditions. If price developments are unfavourable, we will revise the book value downward.

  We assess the price risks to which we are exposed on the procurement and supply markets taking account of current forward prices and expected volatility. For our power plants and parts of our renewable energy portfolio, we limit the earnings risks by selling a significant portion of the electricity forward. We secure the prices of fuel and CO_2 emission allowances needed to produce power when we sell the electricity. This makes it easier for us to plan future margins.

  However, by selling electricity forward, we run the risk of having to make expensive purchases on the market to fulfil supply commitments in the event of production outages or missing fuel deliveries. In addition, as seen with the recent price hikes, collateralising forward contracts can lead to significant temporary cash outflows. We address this risk when deciding how much power to sell forward.

RWE Supply & Trading plays a central role when it comes to managing commodity price risks. It functions as the Group's interface to the global wholesale markets for electricity and energy commodities. RWE Supply & Trading markets large portions of our electricity output on behalf of our power generation companies and purchases the necessary fuel and CO_2 certificates. In compliance with risk thresholds, the company also takes commodity positions to achieve a profit.

Our risk management system for energy trading is aligned with the best practice standards as applied to the trading businesses of banks. As part of this, we only conclude transactions if the associated risks are within approved limits. There are guidelines governing the treatment of commodity price risks and associated credit risks. Our commodity positions are constantly monitored. Risks associated with trades conducted by RWE Supply & Trading for its own account are monitored daily.

The Value at Risk (VaR) is of central importance for risk measurement in trading. It specifies the maximum loss from a risk position not exceeded with a given probability over a certain planning horizon. In the Group we generally base our VaR figures on a confidence interval of 95 % – with a holding period of one day. This means that, with a probability of 95 %, the daily loss will not exceed the VaR. The VaR for the price risks of commodity positions in the trading business must adhere to a €60 million ceiling. In the year under review, we periodically raised this limit to €80 million. The actual daily figures were usually significantly lower. They averaged at €36 million.

In addition, limits derived from the aforementioned VaR thresholds have been set for each individual trading desk. Furthermore, we develop extreme scenarios and factor them into stress tests, determine their consequences for earnings and take countermeasures if we deem the risks to be too high.

The management of our gas portfolio and LNG business is pooled in a dedicated organisational unit at RWE Supply & Trading. These activities are also subject to a daily cap, which is set at €40 million. We also temporarily raised this upper limit to €65 million. The actual average VaR for the year under review was €38 million.

We also use financial instruments to hedge our commodity positions. In the consolidated financial statements, these instruments are, inter alia, presented through the statement of on-balance-sheet hedges. The same applies to financial instruments serving the purpose of limiting interest rate and currency risks. More detailed information on this can be found on pages 136 and 187 et seqq. in the Notes.

- **Regulatory and political risks.** Most countries in which we are active have set their sights on ambitious climate protection goals. Having designed our business model around the energy transition, our company is now able to leverage a range of opportunities for growth. We want to swiftly cut our CO_2 emissions whilst contributing to security of supply. This strategy offers more assurance that regulatory interventions to improve climate protection will not have a disruptive impact on our business.

  Despite the growing proportion of carbon-free or low-carbon technologies in our generation business, it continues to be affected by substantial regulatory and political risks. In the past year in particular, there were massive state interventions in the energy sector. One example of this is the electricity revenue cap in the EU and the UK, which we report on in more detail on page 32. In light of the high energy and commodity prices resulting from the Ukraine crisis, governments imposed temporary limits on revenues achieved by electricity producers exceeding a certain price level. In the short term, we see the risk of the revenue caps being lowered or prolonged, while in the long term, we see the risk of a fundamental change in the electricity market's design leaning towards an energy industry with more state regulation in which revenue is set, e. g. by revenue caps or contracts for difference. Proponents of such measures are increasing in number in the political sphere. If these measures were implemented, they could significantly reduce earnings in the entire generation business.

  Support programmes for renewables and hydrogen projects are also difficult to forecast. Amendments could make investments less attractive, causing us to abandon them, and there is also the risk that subsidies might retrospectively be cut. We do, however, also see the possibility of European governments creating a more favourable framework for investments in green technologies, in a similar vein to the Inflation Reduction Act in the USA. In the dialogue we maintain with policymakers, we point out that companies looking to invest in building climate-friendly energy infrastructure need attractive and reliable framework conditions. Discretionary interventions to the detriment of investors could contribute to governments missing their emissions reduction targets.

  State-imposed restrictions on cross-border trade could also significantly hinder plans to build a green energy infrastructure. We see an elevated risk of this being the case in the USA. As explained on page 35, solar module imports from Asia are now subject to stringent checks, causing considerable delays for solar projects. If the USA continues to impede the procurement of solar panels, then it is possible that our photovoltaic expansion initiatives could fall behind schedule.

  By contrast, the risk exposure of our lignite business has declined somewhat. Germany's governing parties had declared in their coalition agreement at the end of 2021 that Germany should ideally stop producing electricity from coal as early as 2030, eight years before the exit date established in the German Coal Phaseout Act. We had feared significant financial losses due to this plan. As explained on pages 33 et seq., in October 2022 we were able to reach an agreement with policymakers on the future of our lignite business in the Rhenish region. It was decided that RWE would prematurely shut down its last plants by 2030, but would operate more units in the interim than originally legislatively envisaged, to avoid supply shortages. The negotiated conditions are acceptable to us. Furthermore, we now have a reliable basis for planning. Although the exit date has been brought forward, the compensation that we are legally entitled to for the lignite phaseout will remain at €2.6 billion. The European Commission is yet to grant antitrust approval, but we remain confident that Brussels will give the green light.

In energy trading, there is risk of stricter regulatory requirements that limit the scope for transactions or give rise to additional costs. The recently high commodity prices and the associated rise in regulatory action have given weight to this risk.

Dismantling decommissioned power stations is also associated with regulatory risks, particularly in relation to nuclear energy. There is a risk here that stricter legal or regulatory requirements will lead to unexpectedly high expenditure. However, we also see the potential to make better progress than expected and to achieve cost savings.

Even in the present regulatory environment, we are exposed to risks associated with, for instance, approvals for constructing and operating production facilities. This particularly affects our opencast mines, power stations and wind farms. The danger here is that approvals are granted late or not at all and that granted approvals are withdrawn temporarily or for good. Furthermore, delays in the transfer of land that has been assigned to us for lignite mining are also possible.

- **Legal risks.** Individual RWE Group companies are involved in litigation and arbitration proceedings due to their operations or M&A transactions. Out-of-court claims have been filed against some of them. Furthermore, Group companies are directly involved in various procedures with public authorities or are at least affected by their outcomes. To the extent necessary, we have accrued provisions for possible losses resulting from pending proceedings before ordinary courts and arbitration courts.

  Risks may also result from exemptions and warranties that we granted in connection with the sale of assets. Exemptions ensure that the seller covers the risks that are identified within the scope of due diligence, the probability of occurrence of which is, however, uncertain. In contrast, warranties cover risks that are unknown at the time of sale. These hedging instruments are standard practice in sales of companies and equity holdings.

  We currently have low exposure to legal risks. This assessment did not change compared to the previous year.

- **Operational risks.** RWE operates technologically complex, interconnected generation assets. Despite all the precautions taken, damage and outages cannot be entirely excluded. If generation capacity is subject to unplanned downtime, this can result in significant earnings losses given the current elevated prices. Conversely, there is also potential for additional earnings, if plant availability is better than expected. To mitigate risks, we ensure that our power supply commitments are not too high, as we may be forced to buy electricity at a high cost to meet these obligations in the event of production outages. Furthermore, we also regularly maintain our facilities and take out insurance policies if economically viable.

  Utilisation of our wind and solar farms primarily depends on weather conditions. Longer periods of low wind, cloud coverage or darkness coinciding with high energy prices can cause generation volumes and revenue in individual years to remain significantly below estimates. We minimise the impact of weather conditions on Group earnings by dispersing our green assets geographically. This helps us to at least partially compensate for less favourable meteorological conditions at one location with more favourable weather at another.

  When production facilities are built and modernised, delays and cost increases can occur, for example due to logistical bottlenecks or inadequate services provided by suppliers. In recent years, the coronavirus pandemic and international trade conflicts have proven to be risk factors. Project delays can trigger additional spending and even have a negative impact on the level of support received in relation to renewables assets. With the help of circumspect planning and diligent project management, we do everything within our power to deliver projects within the expected time frames.

Operational risks due to the COVID-19 pandemic continue to be a factor, albeit to a significantly lesser extent. A new wave of infections would be associated with potential delays in deliveries from suppliers. It is also conceivable that the reliable operation of our plants may be jeopardised if a large number of employees goes on sick leave. Thanks to comprehensive preventive measures and forward-looking emergency plans, we were able to keep all major operational processes up and running during the peaks of the pandemic. We are confident of being able to accomplish this in the future if necessary.

RWE has ambitious growth targets and has increased its investment budgets significantly. We take care to ensure that our new-build projects and acquisitions satisfy our return requirements. It is difficult to project the actual income our projects will generate. If events unfold unfavourably, new-build initiatives could retrospectively turn out to be unprofitable and prices paid for acquisitions could prove to have been too high. We prepare our investment decisions by conducting extensive analyses to try and map the financial and strategic effects as realistically as possible before taking investment decisions. Moreover, RWE has specific accountability provisions and approval processes in place to prepare and implement the decisions.

Our business processes are supported by secure data processing systems. Nevertheless, it is not possible to rule out a lack of availability of IT infrastructure or a breach in data security. There is a significant risk of cyber attacks. The Ukraine conflict may trigger a rise in these sorts of attacks. We limit our IT risks with high security standards, and groupwide cyber security training programmes are designed to mitigate them. In addition, we regularly invest in hardware and software upgrades.

As in the previous year, we classify our operational risks as 'medium'.

- **Financial risks.** Interest rates, foreign exchange rates, securities prices and rates of inflation are subject to fluctuations, which can be difficult to predict and can have a major impact on our net worth and earnings.

Changes in interest rates give rise to risks and opportunities in several respects. Market interest rates, for example, can impact our provisions, as they are the point of reference for the discount rates used for determining the net present values of obligations. This means that, all other things being equal, provisions decrease when market interest rates rise and increase when market interest rates fall. On pages 174 et seqq. of the Notes, we present the effects of changes in interest rates on the net present values of our pension obligations and on nuclear and mining provisions.

Financing costs rise and fall in line with interest rates. We measure the possible impact using the Cash Flow at Risk (CFaR), applying a confidence level of 95 % and a holding period of one year. The average CFaR at RWE AG in 2022 was €61 million.

Rises in market interest rates can lead to reductions in the prices of the securities we hold and vice versa. This primarily relates to fixed-interest bonds. We measure the risk of such price fluctuations using a sensitivity analysis. As of the balance-sheet date, an increase in market interest rates of 100 basis points would have lowered the value of the bonds on our books by €36 million.

We are also exposed to price risks in relation to our 15 % stake in E.ON, which had a fair value of €3.7 billion at the end of 2022.

Security price fluctuations not only have an impact on RWE's financial assets but also on pension funds. In the case of unfavourable capital market developments, we might have to significantly increase our pension provisions in order to compensate for our fund assets potentially losing value.

We control risks and opportunities from changes in the price of securities with a professional fund management system. Range of action, responsibilities and controls are set out in internal guidelines which the Group companies are obliged to adhere to when concluding financial transactions. All financial transactions are recorded using special software and are monitored by RWE AG.

Foreign exchange risks are overseen centrally by RWE AG. We aggregate foreign currency payments made and received across all Group companies to net financial positions for each currency and hedge the latter almost in full using currency derivatives.

Pricing changes can also give rise to risks. High inflation and rapidly rising wages can trigger an unplanned increase in operational costs. Where applicable, we then have to up our provisions for future obligations. We are particularly exposed to rises in sectors from which we source products and services for nuclear waste disposal and recultivating opencast mine areas.

Cash collateral pledged for forward transactions also harbours a risk. The amount of the payments depends on the extent to which the contractually agreed prices deviate from market quotations as of the respective cut-off date. Substantial differences may weigh heavily on our liquidity. The wholesale price hikes on commodity markets in 2021 and particularly 2022, forced us to periodically pledge unusually high collateral for forward sales. Thanks to our robust financial position and use of financing instruments at our disposal, we were always able to provide the required funds. Another positive was that we also received significant collateral due to the rising commodity prices, in particular for forward transactions for fuel and CO_2 emission allowances.

The conditions at which we finance our debt capital are in part dependent on the credit ratings we receive from independent rating agencies. Moody's and Fitch classify our creditworthiness in the investment grade category. If our rating deteriorates, we may incur additional costs if we have to raise debt capital. This would probably also increase the liquidity requirement when pledging collateral for forward transactions. However, we believe that such a scenario is unlikely. Just last year, Moody's and Fitch confirmed our credit score. They appreciate our solid financial position and RWE's transformation into a leading renewable energy company.

The assessment of our creditworthiness by rating agencies, banks and capital investors depends in part on the level of our net debt. We have set ourselves a net debt cap for this purpose, which amounts to three times the adjusted EBITDA of our core business. We are optimistic that we will be able to adhere to this limit, but we cannot rule out the possibility that we may temporarily exceed it, for example if significant collateral is needed for commodity forward contracts.

Despite the significant increase in volatility on commodity markets, we continue to classify our financial risks as 'medium'.

- **Creditworthiness of business partners.** Our business relations with key accounts, suppliers, trading partners and financial institutions expose us to credit risks. Therefore, we track the creditworthiness of our partners closely and assess their credit standing based on internal and external ratings, both before and during the business relationship. We determine credit limits prior to concluding transactions above a certain size and all trading transactions. These are adjusted if necessary, for instance in the event of a change in the business partner's creditworthiness. At times, we request cash collateral or bank guarantees.

In the trading and financing business, credit risks and the utilisation of the limits are measured daily. We agree on collateral when concluding most over-the-counter trading transactions. Furthermore, we enter into framework agreements, e. g. those of the European Federation of Energy Traders. For financial derivatives, we make use of the German Master Agreement for forward financial transactions or the Master Agreement of the International Swaps and Derivatives Association.

The significant price spikes on commodity markets have increased the danger of transaction partners being unable to meet their obligations. Tangible financial losses from contracts that are particularly valuable to us could be the consequence. We are monitoring the default risks closely and are assessing counterbalancing measures.

Although our risks stemming from the creditworthiness of our business partners have increased overall, they still do not exceed the 'medium' category.

- **Other risks.** Here, we record the potential effects of damage to our reputation, compliance infringements and criminal acts. We continue to classify other risks as 'low'.

RWE's risks and opportunities – general assessment by management. RWE is presented with a number of risks and opportunities that can have a material impact on our economic situation. Our company's risk exposure has not changed fundamentally compared to our assessment of March 2022. There are currently no foreseeable developments that would undermine the viability of RWE AG or the RWE Group.

Recently, our core markets witnessed significant political interventions that weighed on the investment climate. One example is the introduction of revenue caps on electricity production in Europe. It cannot be ruled out that the revenue cap may be lowered and / or prolonged. It is conceivable that this may be the start of more extensive price regulation in the electricity sector. We believe that this currently represents a significant risk. However, there were also positive developments. In the USA, the government introduced the Inflation Reduction Act, creating a reliable framework for green technology investments. The agreement we reached with the German government and the state of North Rhine-Westphalia to bring the lignite phaseout forward to 2030 also gives us more stability. Furthermore, we expect this to go hand in hand with stronger political support for creating climate-friendly replacement assets.

Market developments also present risks and opportunities, as exemplified in the past year. Due to the extreme price spikes on the electricity wholesale market, we were temporarily required to pledge significant collateral for forward contracts. Thanks to our solid financial planning, we were always able to raise the necessary funds. Our economic outlook has improved with the rising electricity prices. However, we are also exposed to more significant earnings shortfalls, should prices drop again. Nevertheless, we remain confident that the market environment will remain favourable for RWE, allowing the company to continue achieving attractive returns by investing in climate-friendly generation assets.

Thanks to the measures for safeguarding our financial and earning power over the long term and our comprehensive controlling and risk management system, we are confident that we can manage our current risks. At the same time, we are establishing the prerequisites for ensuring this remains the case in the future.

Accounting-related internal control system – statements in accordance with Sec. 289, Para. 4, and Sec. 315, Para. 4 of the German Commercial Code. Our financial reporting is exposed to the risk of misrepresentations that could have a significant influence on the decisions made by their addressees. This may cause capital investors to invest in a company based on incorrect assumptions. Capital market law regulations and RWE's Code of Conduct require that we inform the public of our business performance and important company-specific events completely, objectively, accurately, clearly and in a timely manner. We use a series of tools to meet this ambition. Examples of this are our IFRS accounting regulation and the high minimum standards to which we subject the IT systems used to record and process accounting-related data. Furthermore, we use an accounting-related Internal Control System (ICS) for quality assurance purposes. The ICS aims to prevent potential errors and misrepresentations that result from non-compliance with accounting standards.

The Accounting Department of RWE AG is responsible for designing the ICS and reviewing its effectiveness. In doing so, it applies groupwide rules. In addition, it receives assistance from the ICS Committee, the objective of which is to ensure that the ICS is applied throughout the Group following uniform principles and meeting high ambitions in terms of correctness and transparency. The Committee consists of representatives from the Accounting, Controlling & Risk Management and Internal Audit & Security Departments, along with officers from the human resources, procurement, trading, finance, taxes and IT functions, which are closely related to accounting.

We subject the ICS to a comprehensive review every year. First, we examine whether the risk situation is presented appropriately and whether suitable controls are in place for the identified risks. Then, we test the effectiveness of the controls. ICS reviews that pertain to accounting-related processes, for example, to the preparation of financial statements or to consolidation, are conducted by employees from the Accounting Department. When it comes to processes handled by service centres on our behalf, for example invoice processing, an auditor certifies the appropriateness and effectiveness of the controls. The representatives of the finance, human resources, procurement, trading and IT functions document whether the agreed ICS quality standards are adhered to by their respective areas. Our Internal Audit & Security Department provides assistance for the ICS reviews. The results of the reviews are documented in a report to the Executive Board of RWE AG. The review conducted in 2022 once again demonstrated that the ICS is effective.

Within the scope of external reporting, the members of the Executive Board of RWE AG take an initial half-year and a full-year balance-sheet oath, confirming that the prescribed accounting standards have been adhered to and that the financial statements give a true and fair view of the net worth, financial position and earnings. When in session, the Supervisory Board's Audit Committee regularly concerns itself with the effectiveness of the ICS. Once a year, the Executive Board of RWE AG submits a report on this to the Committee.

Notes on the compliance management system. The RWE Group has established a compliance management system (CMS) that is aligned to its risk exposure and aims to ensure adherence to legal provisions as well as internal guidelines and regulations. With the help of our CMS, we want to enshrine compliance as a core value, solidifying it in the thoughts and actions of our staff and thereby avoiding potential misconduct. In doing so, we are particularly diligent in identifying and avoiding the risk of corruption. Measures taken include consulting in case of isolated incidents and training courses. We also carry out regular compliance risk analyses. Our employees have access to a whistleblower channel – where they can choose to remain anonymous – to notify compliance officers if they witness violations or activity that could damage the business. For more information on our CMS, please refer to page 90 et seqq.

2.11 Disclosure relating to German takeover law

The following disclosures are in accordance with Sections 315a and 289a of the German Commercial Code as well as with Section 176, Paragraph 1, Sentence 1 of the German Stock Corporation Act. They relate to company-specific regulations, for example regarding adjustments to the capital structure by the Executive Board or a change of control of the company. At RWE, these provisions are in line with the standards of German listed companies.

Composition of subscribed capital. On 31 December 2022, RWE AG's capital stock amounted to €1,731,123,322.88. It is divided among 676,220,048 no-par-value bearer shares.

Limitation of voting rights or share transfers and employee share schemes. One share grants one vote at the Annual General Meeting and determines the proportion of the company's profit to which the shareholder is entitled. This does not apply to RWE AG's treasury stock, which does not confer any rights to the company. Voting rights are excluded by law in cases where Section 136 of the German Stock Corporation Act applies.

Within the scope of an employee share plan, we issued 424,120 RWE shares to our employees in Germany in the financial year that just ended. The beneficiaries may only freely dispose of the shares after 31 December 2023.

RWE also has employee share schemes in the United Kingdom. Participating companies are RWE Generation UK plc, RWE Supply & Trading GmbH UK and RWE Technology UK Limited. Last year, 21,267 RWE shares were purchased under these schemes. The shares are also subject to a restriction on disposal, which lasts five years from the grant date.

Employees can exercise the control rights conferred on them from the employee shares in the same manner as other shareholders can whilst in compliance with statutory regulations and the provisions of the Articles of Incorporation.

Shares in capital accounting for more than 10 % of voting rights and special rights with control powers. As of 31 December 2022, no holding in RWE AG exceeded 10 % of the voting rights. There are no RWE shares with special rights that confer control powers.

Appointment and dismissal of Executive Board members / amendments to the Articles of Incorporation. Executive Board members are appointed and dismissed in accordance with Sections 84 et seq. of the German Stock Corporation Act in conjunction with Section 31 of the German Co-Determination Act. Amendments to the Articles of Incorporation are made pursuant to Sections 179 et seqq. of the German Stock Corporation Act in conjunction with Article 16, Paragraph 5 of the Articles of Incorporation of RWE AG. According to the aforementioned provision in the Articles of Incorporation, unless otherwise required by law or the Articles of Incorporation, the Annual General Meeting shall adopt all resolutions by a simple majority of the votes cast or – if a capital majority is required – by the simple majority of the capital stock represented when the resolution is passed. Pursuant to Article 10, Paragraph 9 of the Articles of Incorporation, the Supervisory Board is authorised to pass resolutions in favour of amendments to the Articles of Incorporation that only concern formal matters, without having a material impact on the content.

Executive Board authorisation to implement issuances and buybacks of RWE shares. The Annual General Meeting of 26 April 2018 authorised the Executive Board of RWE AG, subject to Supervisory Board approval, to purchase shares in the company accounting for up to 10 % of the capital stock when the resolution was passed or when the authorisation is exercised, if the latter is lower at that time. At the Executive Board's discretion, the purchase can be made on the stock exchange or via a public offer. Shares acquired in this manner may be used for all purposes described in the authorisation. Shareholder subscription rights may be waived depending on the purpose for which the shares are used.

The Annual General Meeting of 28 April 2021 authorised the Executive Board to increase the company's capital stock subject to the approval of the Supervisory Board by up to €346,224,663.04 through the issuance of up to 135,244,009 bearer shares (authorised capital). The authorisation is limited to five years and expires on 27 April 2026.

The Annual General Meeting of 28 April 2021 further authorised the Executive Board until 27 April 2026, subject to Supervisory Board approval, to issue bearer convertible and / or option bonds with a total face value of up to €5,000,000,000 with or without a limited maturity and to grant the bondholders convertible or option rights to bearer shares in the company. To enable the issuance of shares to holders of convertible and / or option bonds, the Annual General Meeting of 28 April 2021 conditionally increased the company's capital stock by up to €173,112,330.24 (conditional capital), corresponding to 67,622,004 bearer shares.

New shares from authorised capital and the aforementioned bonds may be issued in exchange for contributions in cash or in kind. These shares must generally be tendered to the shareholders for subscription. However, the Executive Board is authorised, subject to Supervisory Board approval, to waive subscription rights in the following cases:

- to avoid fractions of shares resulting from the subscription rate;
- if the issuance is conducted in exchange for contributions in kind;
- to provide protection from dilution in connection with convertible and / or option bonds that have already been issued;
- if the issue price of the new shares or bonds is not significantly below their quotation or their theoretical fair value calculated by generally accepted methods of quantitative finance and if waived subscription rights are limited to no more than 10 % of the capital stock.

In sum, shares issued from authorised capital with a waiver of subscription rights and in connection with convertible or option bonds may not exceed 10 % of the capital stock. The aforementioned upper limit is defined by the amount of capital stock at the time the resolution providing the authorisation was adopted or when the authorisation is exercised, if the capital stock is lower at that time. Other measures taken waiving subscription rights count towards the upper limit.

RWE exercised the authorisation to issue convertible bonds in connection with the acquisition of Con Edison Clean Energy Businesses. On 1 October 2022, the Executive Board decided with the approval of the Supervisory Board to issue a mandatory convertible bond with a total nominal value of €2,427,600,000.00 to Qatar Holding LLC in exchange for a cash contribution. The new shares from the conversion of the bond account for 9.1 % of the increased capital stock.

The issuance of the mandatory convertible bond used nearly all the leeway for taking capital measures waiving subscription rights under the existing authorisations.

Effects of a change of control on financing instruments. Our debt financing instruments often contain clauses that take effect in the event of a change of control. Such provisions are in place e. g. in respect of our €8 billion in syndicated credit lines, and essentially mean that in the event of a change of control or majority at RWE AG, drawings are suspended until further notice. The lenders shall enter into negotiations with us on a continuation of the respective credit line. The time limit for doing this is 30 days from the notification of the change of control. On expiry of the time limit, lenders who are not satisfied with the outcome of the negotiations may revoke their loan commitment or cancel the loan if it has already been paid out, requesting immediate repayment.

The RWE bonds that we placed publicly in 2021 and 2022 are also subject to change-of-control clauses. In the event that a change of control is announced or implemented, investors may request that their bonds be redeemed by a certain deadline, if RWE's long-term credit rating falls below investment grade due to the change of control or if the rating agencies stop issuing us a credit rating. A similar rule applies to the senior bond that matures in 2037, a small portion of which remained on our books as it could not be fully transferred to innogy in 2016.

In the event of a change of control, we can redeem our two subordinated hybrid bonds with volumes of €282 million and US$317 million within the determined change-of-control period. If they are not redeemed and our long-term credit rating falls below investment grade or credit ratings are no longer issued, their annual yield rises by 500 basis points.

Compensation agreement with the Executive Board and employees in the event of a takeover offer. The current version of the German Corporate Governance Code dated 28 April 2022 recommends that no commitments to additional benefits be made in the event that Executive Board members terminate their employment contract early due to a change of control. We fully adhere to this principle, meaning that we have not included clauses envisaging a special right of termination or rights to severance subject to a change of control in any of the current employment contracts of the members of the Executive Board of RWE AG.

Share-based compensation for Executive Board members and executives is subject to the following provisions: in the event of a change of control, RWE will pay out all the performance shares that have been finally granted, but have not been paid out yet on expiry of the holding period. Performance shares granted on a preliminary basis on the date of a change of control are valued based on the degree to which the targets have been achieved up to that point in time. Performance shares granted on a preliminary basis in the year of the change of control lapse. They are replaced by a new plan of equal value for the Executive Board members and executives for the fiscal year in which the change of control occurs and the following years.