

# BayWa

## Embracing renewable energy

BayWa is an international trading company operating in the fields of energy, agriculture and building materials. In this thematic report, which is the third in a sequence of short notes and interviews about BayWa, we examine how BayWa's energy segment is evolving in response to society's shift away from fossil fuels. The review includes both BayWa's strategic investment in renewable energy related activities and numerous environmentally friendly new products launched by the group's conventional energy business.

### Renewable energy business driving group growth

BayWa's renewable energy business, BayWa r.e., dates back to 2009, making it a relatively new addition to the group. It has grown rapidly since then, generating €110.9m EBIT in FY21, which represented 37% of group operating EBIT. In December 2020 BayWa announced that funds advised by Energy Infrastructure Partners (EIP, formerly Credit Suisse Energy Infrastructure Partners) would take a 49% stake in BayWa r. e., implicitly valuing the renewables business at over €1bn. At the time management noted that this investment would enable BayWa r.e. to scale up its solar and wind farm project business and expand both its independent power provider (IPP) activity and its photovoltaic (PV) distribution business, potentially boosting BayWa r.e.'s EBIT to over €170m by 2023. (For comparison, management's target is for group EBIT to reach more than €350m by 2025.)

BayWa r.e. is benefiting from participation in the global switch to renewable energy generation. According to the International Energy Agency (IEA), the global PV market outside of China grew to at least 90GW of capacity installed in 2020, a 14% increase year-on-year. The amount of generation capacity in China grew by 60% during 2020 to 48.2GW, which was a return to 2017 levels after two years in a row of market slowdown. The Global Wind Energy Council states that 93GW of new wind capacity was installed globally in 2020, a 53% year-on-year increase, taking cumulative installed global capacity to 743GW.

### Conventional energy business adapting to meet climate targets

BayWa's longer-established Conventional Energy business unit is primarily engaged in selling heating oil, fuels, lubricants and wood pellets, so it is adapting its activities to meet the changing requirements of its customers as they begin to adopt more sustainable options. For example, investment in capacity to support rising consumer demand for wood pellets, which are treated as a carbon-neutral energy source and are therefore exempt from carbon taxes in Germany, resulted in a 31.2% year-on-year rise in wood pellet sales during the first three quarters of FY21. The business unit was restructured in January 2020 to bring its sustainability initiatives together as BayWa Mobility Solutions (BMS). BMS's activities are split into three fields: the planning, installation, operation and maintenance of electric vehicle (EV) charging infrastructure; the establishment of a network of filling stations for liquefied natural gas (LNG); and filling station charge card solutions for EVs.

Consumer staples

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#### Share details

Code	BYW6
Listings	Frankfurt, Munich, Xetra
Market capitalisation	€1.35bn

#### Company description

BayWa has an international renewable energy business focused on solar and wind farms, and trades oil and lubricants in Germany and Austria. It also trades agricultural produce and equipment within Europe and globally and is a retailer of building materials in Germany.

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## Energy segment business overview

The BayWa group operates through three core segments, Energy, Agriculture and Building Materials, together with a smaller Innovation & Digitalisation segment. The Energy segment, which is the subject of this report, has an international renewable energy business, BayWa r.e., which develops and sells solar and wind farms and, according to management estimates, is the largest distributor of PV systems in Europe and one of the top three in the United States. This activity is complemented by a conventional energy business, which trades oil and lubricants in Germany and Austria.

### Dedicated renewable energy business growing rapidly

BayWa's management responded early on to the shift from conventional to renewable energy and started to acquire companies developing solar parks and wind farms in 2009. These renewables activities were grouped together as BayWa r.e. in 2012 to give greater impetus to the development of this segment. BayWa r.e. currently addresses three areas: projects, operations and solutions, thus addressing all the material parts of the renewable energy supply chain. The projects activity encompasses project planning, management and construction of wind farms and solar parks and the subsequent sale of finished plants. The operations activity covers planning and technical services, technical and commercial management of existing plants and plant maintenance as well as energy trading and the marketing of energy produced by its own plants as an IPP. It currently has around 10GW of capacity under management and trades over 7GW of energy annually. The solutions activity trades PV components and storage technology for installers. This provides a useful differentiator, reducing the cost of components for projects and ensuring availability, as well as generating around a tenth of the business unit's EBIT. Since it was founded, BayWa r.e. has sold more than 4.6GW of solar modules. This compares with a total global cumulative installed capacity for PV at the end of 2020 of more than 760GW (Source: IEA, 1GW = 1,000 MW). BayWa r.e. is active in Europe, North America and the Asia-Pacific region including Australia.

**Exhibit 1: 250MW wind farm in Texas**



Source: BayWa r.e.

**Exhibit 2: 27.4MWp\* floating solar park in Zwolle, the Netherlands**



Source: BayWa r.e. Note: \*Megawatt peak.

BayWa r.e. has grown very rapidly since its formation. It accounted for 37% of group EBIT in FY20, when a total of 30 wind farms and solar parks were sold with a collective output of 667.0MW, of which 250MW were located in the United States and 160MW in the Netherlands. This compares with c 139GW of solar power installed globally that year (Source: IEA). Sales from the business unit rose by 27% year-on-year in 2020 to a record €2,500.6m and EBIT by 10% to a record €110.9m. BayWa r.e.'s performance for the first nine months of FY21 (9M21) is not necessarily indicative of the year as whole because the majority of project sales typically take place in Q4, so FY20 metrics are a more helpful way of understanding the business. However, we note that the total output of PV

modules sold in 9M21 was 72% higher year-on-year and the total capacity of wind farms and solar parks sold during the period was over 200MW. Revenues jumped by 66.9% to €2,219.6m and EBIT trebled to €69.0m. Management's target for 2021 was for project sales of 1GW (1,000MW), though some sales may have been deferred to early 2022. BayWa's global project development pipeline totalled 17.6GW in December 2021 compared with 13.6GW a year previously.

As discussed in the first note in this series [BayWa – Sustainable solutions for life](#), BayWa r.e. is highly capital intensive, so management has secured green financing to support the growth of this activity. The group issued a €500m green bond in June 2019 to refinance solar and wind parks. In December 2020 BayWa announced that funds advised by EIP would take a 49% stake in BayWa r.e., implicitly valuing the renewables activity at over €1bn. Management noted that this investment would enable BayWa r.e. to scale up the project business to up to 3GW of project sales per year from 2025 onwards. The investment will also enable BayWa r.e. to expand both its IPP activity, thus creating a recurring revenue stream from contracts to supply power from 2022 onwards, and its PV distribution business. Management intends IPP activity to be generating around 23% of segmental revenues by 2023 and project sales 56%, potentially boosting BayWa r.e.'s EBIT to over €170m. By 2028, management intends to be selling around 3GW of electricity per year from its own power generation assets.

## **Conventional energy business complements agricultural supply and building materials activities**

The longer-established conventional energy business unit is primarily engaged in selling heating oil, fuels, lubricants and wood pellets in the German states of Bavaria, Baden-Württemberg, Hesse and Saxony and in Austria. Heating materials are predominantly sold through in-house offices. It sells diesel and Otto fuels, as well AdBlue diesel exhaust fluid to over 100 group filling stations and partner stations in Germany. BayWa also supplies fuels, as well as AdBlue, to resellers and wholesalers, and offers a fleet filling station card, which can be used at around 3,300 filling stations across Germany. The sale of conventional heat carriers complements the domestic agricultural trading and supply and building materials activities, which will be discussed in subsequent notes, with many common customers forming a stable customer base. As discussed below, in January 2020 the Conventional Energy business unit was restructured to create a Mobility Solutions activity focused on low-carbon transport to bring together initiatives in this area.

EBIT attributable to the Conventional Energy business unit decreased from a record €26.0m in 9M20 to €11.1m in 9M21. The decline was expected because consumers took advantage of low prices and VAT rates in FY20 to stock up on heating oil ahead of the introduction of carbon taxes in 2021. In contrast, oil prices surged during FY21, depressing demand for heating oil. However, sales of wood pellets, which are treated as a carbon-neutral energy source and are therefore exempt from carbon taxes, grew by 31.2% year-on-year during 9M21, supported by capacity expansion at the two pellet plants in Wunsiedel during FY20. Business unit revenues grew by 10.7% year-on-year to €1,465.3m, reflecting higher oil prices.

## **BayWa r.e. helps nations, companies and individuals achieve their decarbonisation goals**

### **Annual installations of solar and wind need to reach 1,000GW by 2030 to reduce global warming to 1.5°C**

In the run-up to the COP26 Climate Change Conference held in Glasgow last year, many countries announced new commitments detailing their contributions to the global effort to reach climate goals. More than 50 countries, including the entire European Union, pledged to meet net zero emissions

targets. According to the International Energy Agency’s report ‘World Energy Outlook 2021’, these commitments should start to bend the global emissions curve down. The report states that even if all the pledges are adhered to (the Announced Pledges Scenario or APS), global energy-related CO<sub>2</sub> emissions would fall by 40% over the period to 2050, resulting in a global average temperature rise of around 2.1°C above pre-industrial levels by 2100. While all sectors would need to reduce emissions, the report notes that the electricity generation sector would deliver by far the largest reduction, resulting in annual additions of solar PV and wind approaching 500GW by 2030. However, the report advises that a doubling of solar PV and wind deployment relative to the APS is needed to close the gap between today’s pledges and a 1.5°C trajectory over the next 10 years.

A recent example of how BayWa r.e. is helping decarbonise an energy intensive industry is the solar park in the municipality of Witnica, northern Poland, which is the largest solar installation in the country. The park has a capacity of 68GWh/annum, sufficient to power 22,500 average homes in Poland, which saves 50,000 tonnes of CO<sub>2</sub> a year. (For comparison, the total amount of electricity generated in Poland during 2020 was 157,933GWh, including 109,423GWh from coal, 15,800GW from wind and 1,990GW from solar. Source: Statista.) BayWa developed the park on an 80-hectare site in northern Poland, close to the German border between Poznań and Berlin. The project was financially viable without any government subsidy because BayWa r.e. arranged a 10-year virtual power purchase agreement (VPPA) with HeidelbergCement. This was the first VPPA to be signed in Poland. The VPPA was key to the success of the project because it secured a long-term partner, Gorazdze Cement, a subsidiary of HeidelbergCement, which was willing to off-take a substantial share of the generation, thus underpinning cash flows and allowing investors to recoup their investment. Involvement in this project is a key element of Gorazdze Cement’s plan to reduce specific net CO<sub>2</sub> emissions to below 525kg per tonne of cement-based material by 2025, a reduction of 30% compared to 1990 figures. Importantly, since the solar park can generate power at a levelised cost of electricity that is less than the cost of accessing conventional power sources from the grid, involvement also improves Gorazdze Cement’s competitiveness. The solar park was sold to the Irish Alternus Energy Group in Q321. The project is significant because it shows other municipalities in Poland, a country where around 80% of energy needs are still met from coal-fired generation, that solar generation can be cost-competitive without recourse to subsidies.

**Exhibit 3: Video on subsidy-free project in Witnica, Poland**



Source: BayWa r.e.

**Exhibit 4: UK’s first subsidy-free wind farm in Inverclyde, Scotland**



Source: BayWa r.e.

BayWa r.e. was also involved in the development and construction of the UK’s first subsidy-free wind farm, which is located to the west of Glasgow. There are eight Enercon 110m wind turbines on the site, giving an installed capacity of 24MW, sufficient to power around 40,000 homes. The clean energy produced displaces more than 18,000 tonnes of CO<sub>2</sub> emissions annually. Tesco Group has signed a 15-year PPA taking power from the site, bringing the retailer closer to its goal of using 100% renewables for all its electricity needs. BayWa announced the sale of the site in September 2020 to James Jones & Sons, the UK’s largest sawmill firm. The first electricity was generated in November that same year.

As discussed in Edison's report [The hydrogen economy – Decarbonising the final 20%](#), published in December 2020, hydrogen can play an important role in balancing out the intermittency of solar and wind power generation. Surplus electricity from renewable sources can be converted to hydrogen, stored for weeks or months until required, then used to power fuel cells or specially adapted gas-powered generators. BayWa r.e. and its Dutch subsidiary GroenLeven are partnering with Netherlands-based network company Alliander on a project in the Netherlands in which energy from a 50MWp solar farm is converted into green hydrogen using an electrolyser at times of overproduction and stored locally in a sustainable way. Green fuel supplier OrangeGas is purchasing the green hydrogen produced and distributing it to various filling stations across the Netherlands. The project, which is not yet operational, will test the extent to which a hydrogen electrolyser can adapt to the constantly changing output from a solar plant and thus assess its suitability for solving grid congestion issues.

BayWa r.e. is also making it easier for private households to use green electricity. In the autumn of 2020 it launched the 'sonniQ' home energy management system. This is a package consisting of a solar array, storage system, intelligent energy manager that connects and co-ordinates all of the energy management components in the home and a user-friendly app that gives customers an overview of their current electricity production, consumption and costs. If the PV system is generating more than is being consumed, the electricity is directed into the storage system. When the energy storage system is full, the energy manager ensures that surplus energy is transmitted to the grid and the householder is paid for the electricity.

## Supporting more environmentally friendly mobility options: BayWa Mobility Solutions

Each of the group's segments is adapting its portfolio to provide more environmentally friendly options. As noted above, BayWa Mobility Solutions (BMS) was created during a restructuring of the Conventional Energy business unit in January 2020. Its activities are split into three fields: the planning, installation, operation and maintenance of EV charging infrastructure; the establishment of a network of filling stations for LNG; and filling station charge card solutions for EVs.

### Exhibit 5: BayWa Mobility Solutions' LNG filling station in Nördlingen, Germany



Source: BayWa

EV charging infrastructure is being rolled out rapidly in Germany. In April 2021, the Boston Consulting Group predicted that the number of public charging stations in the country would increase from around 35,000 available at that point to 400,000 in 2030, representing annual sales of €7bn. BMS is active in this future market; for example in late 2020 it began installing 250 quick

charging stations at 80 locations of the DIY store chain Hellweg in Germany. In October 2020 BMS acquired Hilmar Eichholz, a Berlin-based company specialising in buried cable construction, electrical installation and e-mobility, to strengthen its expertise in the field of buried cable construction and reduce its dependence on external service providers and to significantly expand its installation network in Germany.

LNG is a lower carbon emission alternative to conventional transportation fuels. BMS opened its first LNG filling station in Wolfsburg in March 2020, followed by three others in the same year. During Q321 BMS opened two additional LNG filling stations. BayWa had nine LNG filling stations at the end of 2021 and intends to open a further three during 2022. In future BMS is likely to complement sales of conventional LNG with bio-LNG, which is a liquefied form of bio-methane produced from organic household and industrial waste, manure and sewage sludge.

BayWa's established fleet filling station card may also be used by drivers of EVs, giving users access to over 200,000 charging points including over 95% of the public charging stations across Germany. BMS has recently launched a new software platform, [chargemondo.de](https://chargemondo.de), which takes consumers through all of the stages of setting up a private charging station including selecting and installing the charge point, registering the charge point with the grid operator and applying for subsidies of up to €6,000 for the charging point itself and of over €280/year from selling carbon credits.

## Other notes and interviews in this series

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**[Sustainable solutions for life](#)**: a review of how the group is able to make a major contribution to limiting the effects of climate change by adapting both its strategy and internal operating processes and how this helps the group secure green investment, creating a virtuous circle. (Published 2 February 2022.)

**Investment from Energy Infrastructure Partners accelerates the growth of the renewable energy segment**: an [interview with CFO Andreas Helber](#) on the group's strategy and how green financing is helping BayWa achieve its targets for 2025. (Published 9 February 2022.)

**Adapting agricultural techniques in response to climate change**: a review of some of BayWa's developments that help farmers mitigate the effect of climate change together with a discussion of how BayWa's FarmFacts software supports farmers as they move to more sustainable production methodologies. (Upcoming.)

**Embracing more environmentally sustainable construction practices**: an exploration of environmentally linked activities in BayWa's Building Materials segment. (Upcoming.)

**Strong financial foundation**: an analysis of FY21 financial results. (Upcoming.)

**Applying ESG principles delivers strong operational performance**: an interview with CEO professor Klaus Josef Lutz explaining how the group's environmental strategy underpins its operational performance plus a discussion of how he sees this commitment to the environment helping the group continue to grow and evolve in future. (Upcoming.)

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