

**MASTERS IN
FINANCE**

**MASTERS FINAL WORK
PROJECT**

**EQUITY RESEARCH:
WACKER CHEMIE**

ISABELA ROCHA GOMES SOARES

JUNE 2024

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SUPERVISOR:

JOSÉ AFONSO MARTINS ALMEIDA

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Abstract

Wacker Chemie AG is a leading global chemical company that operates in diverse industries, providing innovative solutions and products. With a comprehensive portfolio, Wacker serves sectors such as construction, automotive, electronics, healthcare, and consumer goods. The company is renowned for its expertise in Silicones, Polymers, Polysilicons and Biosolutions.

This report issues a BUY recommendation supported by a comprehensive valuation analysis. The target prices, based on multiples-based valuation and FCFF, present substantial upside potential for investors. For FCFF valuation, the target price is €138, offering 20.27% potential upside. In multiples-based valuation, the STRONG BUY recommendation comes with a target price of €167, reflecting an attracting 45.79% potential upside. The consensus target price given by Capital IQ mean is 127, the highest is 175 and the lowest is 103. According to the consensus, WCH recommendation is BUY, outperform. however, with a Medium Risk.

The company's recommendation is mainly explained by the demonstration of strong operational efficiency and profitability; WACKER maintains a favorable valuation relative to revenue and assets, suggesting confidence in its market performance; low net debt/equity and net debt/EV ratios highlight its strong financial health and prudent leverage management

The Free Cash Flow to Firm (FCFF) shows a positive outlook for Wacker Chemie AG, the discounted cash flow (DCF) analysis yields an enterprise value of €7,036 billion. After adjusting for net debt and other assets and liabilities, the equity value is estimated at €6,831 billion. This substantial valuation, compared to the current market capitalization of €5,678 billion, indicates significant upside potential for investors, reinforcing the BUY recommendation for Wacker Chemie AG. These factors, combined with WACKER's strategic growth initiatives and robust market positioning, make it an attractive investment opportunity with significant potential for sustained value creation.

However, Wacker's stock is trading at a discount mostly due to: substantial drop in sales and persistent high costs for raw materials and energy and elevated ESG concerns within the industry and significant financial risks require cautious consideration.

JEL classification: G00; G10; G30; G32; G34; G35.

Keywords: Wacker Chemie; Chemical Sector; Equity Research; Valuation; M&A

Resumo

A Wacker Chemie AG é uma empresa química global líder que atua em diversos setores, fornecendo soluções e produtos inovadores. Com um portfólio abrangente, a Wacker abrange diversos setores como construção, automotivo, eletrônicos, saúde e bens de consumo. A empresa é comumente reconhecida por sua expertise em Silicones, Polímeros, Polissilicones e Biosoluções.

Este relatório emite uma recomendação de COMPRA que é respaldada por uma análise de avaliação aprofundada. Os preços-alvo, com base na avaliação por múltiplos e no FCFF, apresentam um grande potencial de valorização para os investidores, com base na por múltiplos e no FCFF. O preço-alvo para a avaliação por FCFF é de €138, oferecendo um potencial de valorização de 20,27%. Na avaliação por múltiplos, a recomendação de COMPRA FORTE tem um preço-alvo de €167 e um potencial de valorização atrativo de 45,79%. O preço-alvo médio do consenso dado pelo Capital IQ é 127, o mais alto é 175 e o mais baixo é 103. Ainda de acordo com o consenso, a recomendação para WCH é COMPRA, no entanto, com um Risco Médio.

A recomendação da empresa é explicada principalmente pela demonstração de forte eficiência operacional e rentabilidade; a WACKER mantém uma avaliação favorável em relação à receita e aos ativos, sugerindo confiança em seu desempenho de mercado; os índices baixos de dívida líquida/patrimônio líquido e dívida líquida/EV destacam sua resiliente saúde financeira e gestão prudente de alavancagem.

O Fluxo de Caixa Livre para a Empresa (FCFF) mostra uma perspectiva positiva para a Wacker Chemie AG, a análise de fluxo de caixa descontado (DCF) indicam um 'Enterprise Value' de €7,036 bilhões. Após ajustes para dívida líquida, outros ativos e passivos, o valor é estimado em €6,831 bilhões. A Wacker Chemie AG tem uma recomendação de COMPRA com base nessa avaliação significativa e em comparação com a capitalização de mercado atual de €5,678 bilhões. Esses elementos, em conjunto com as iniciativas estratégicas de crescimento da companhia e seu forte posicionamento no mercado, tornam a empresa uma oportunidade de investimento atraente que tem um grande potencial para criar valor sustentável.

No entanto, as ações da Wacker estão sendo negociadas com um desconto principalmente devido a: queda significativa nas vendas e custos persistentemente altos de matérias-primas e energia, preocupações elevadas com ESG dentro da indústria e riscos financeiros substanciais que exigem uma consideração cautelosa.

Classificação JEL: G00; G10; G30; G32; G34; G35.

Palavras-Chave: Wacker Chemie; Setor Químico; Equity Research; Avaliação de Empresas; Fusões e Aquisições;

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One of the greatest challenges of this journey was moving abroad to Portugal, far away from my family. It was difficult to adjust to a new country, culture, and language while managing the demands of my studies. However, this experience has been incredibly rewarding and has contributed significantly to my personal growth and maturity. Despite the adversities, I am grateful for the opportunity to step out of my comfort zone and gain a broader perspective.

Personally, I want to express how appreciative I am of my family and friends for their unwavering love and support. Their visits to Portugal were especially inspiring and provided the strength I needed to persevere. These moments of togetherness were a signal of hope and motivation during challenging times. Their reliable support and presence throughout this journey. Their encouragement and companionship were essential in overcoming the difficult moments.

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Glossary

€		S	
€b	Euro Billions	SG&A	Selling, General and Administrative
€m	Euro Millions	W	
C		WACC	Weighted Average Cost of Capital
CAGR	Compound Annual Growth Rate	WCH	Wacker
CAPEX	Capital Expenditures	X	
CAPM	Capital Asset Pricing Model	xxxxA	Actual Period
CRP	Country Risk Premium	xxxxF	Forecast Period
CSR	Corporate Social Responsibility	Y	
D		YE	Year End
D&A	Depreciation and Amortizations	YoY	Year on Year
DCF	Discounted Cash Flow	YTD	Year to Date
DDM	Dividend Discount Model		
DPS	Dividends Per Share		
E			
E	Earnings		
EBIT	Earnings Before Interest and Taxes		
EBITDA	Earnings Before Interest Taxes Depreciation and Amortization		
EMDE	Emerging Markets and Developing Economies		
EPS	Earnings Per Share		
EV	Enterprise Value		
F			
FCFE	Free Cash Flow to Equity		
FCFF	Free Cash Flow to Firm		
G			
GDP	Gross Domestic Product		
I			
IPO	Initial Public Offering		
M			
M&A	Mergers and Acquisitions		
MRP	Market Risk Premium		
O			
OPEX	Operational Expenditures		
P			
P	Price		
PP&E	Property Plant and Equipment		
R			
ROA	Return on Assets		
ROCE	Return on Average Capital Employed		
ROE	Return on Equity		
ROIC	Return on Invested Capital		

Founded:	Headquarters:	Ticker:	Data-Base price:	Target Price:	Upside Potential:
1914	Munich	WCH	114.30	€ 138 - € 167	20.27% - 45.79%
Sector:	IPO:	Exchange:	(31/12/2023)	Recommendation:	Level of Risk:
Chemical	10/04/2006	XTRA		Buy – Strong Buy	Medium Risk

1. Research Snapshot

The investment recommendation for Wacker Chemie AG is **BUY**, supported by a comprehensive valuation analysis. The target prices, based on multiples-based valuation and FCFF, present substantial upside potential for investors. For **FCFF valuation**, the target price is **€138**, offering **20.27% potential upside**. In **multiples-based valuation**, the **STRONG BUY** recommendation comes with a target price of **€167**, reflecting an attracting **45.79% potential upside**. (Figure 01). **The consensus target price given by Capital IQ mean is 127, the highest is 175 and the lowest is 103.** According to the consensus, **WCH recommendation is BUY, outperform.**

Valuation Overview:

Wacker's valuation is based in careful analysis, employing discounted cash flow (DCF) for FCFF, discounted by weighted average cost of capital (WACC) and multiples-based valuation. The **Equity Value** is estimated at **€6,831 Billion** for FCFF.

Key Assumptions:

Critical assumptions driving the valuation process include **revenue forecasts, discount rates, and growth projections**. The forecast horizon crosses **five years**, aligning with the **cyclical nature** of the chemical sector. Revenue projections are meticulously developed, considering **macroeconomic factors** such as the inflation rate in Europe.

A Global Overview of Strategic Segments and Market Leadership:

Wacker Chemie AG operates globally across four key segments: Silicones, Polymers, BioSolutions, and Polysilicon. (Figure 02). **WACKER SILICONES** stands as the second global leader, dominating the European market with a versatile product range. **WACKER POLYMERS**, the world's largest producer, focuses on innovative binders and additives for diverse industries. **WACKER BIOSOLUTIONS** excels in biotech solutions, particularly in pharmaceutical manufacturing. **WACKER POLYSILICON**, a global leader in hyper-pure polysilicon, serves both the semiconductor and solar cell markets. The company strategically positions itself in key markets, with Asia offering substantial growth prospects across its diverse segments.

Strategies and Opportunities:

Wacker Chemie AG's 2030 strategy is prepared for profitable growth, competitive leadership, and sustainability. With ambitious goals, including **sales over €10 billion and EBITDA margins above 20% in 2030**, Wacker demonstrates a commitment to innovation and long-term sustainability. The company is **well-positioned** to embrace opportunities such as US IRA credit incentives and European transition energy incentives.

Risk Assessment:

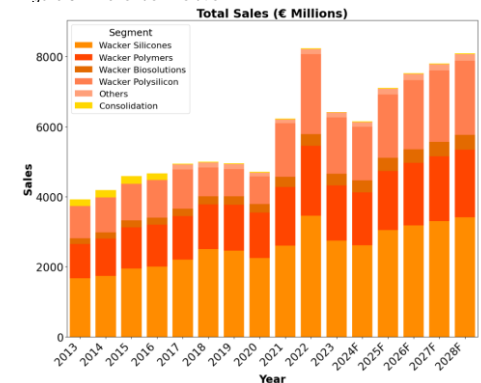
Wacker faces a challenging risk landscape, involving strategic, operational, business, and financial dimensions. While the company **accurately manages certain risks**, elevated ESG concerns within the industry and significant financial risks require cautious consideration. **Proactive risk mitigation strategies and continuous monitoring are essential for navigating these challenges.** (Figure 04)

Figure 01: Stock Price Evolution and Target Price



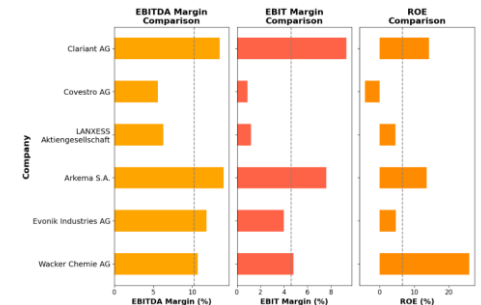
Source: Capital IQ, elaborated by the Author using Phyton

Figure 02: Revenue Evolution



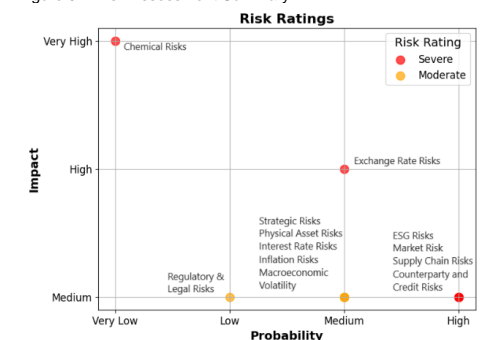
Source: Capital IQ, Bloomberg, Wacker Chemie 2023 Annual Report and Author's Analysis elaborated using Phyton

Figure 03: Peers Comparison: EBITDA Margin, Ebit Margin and ROE



Source: Capital IQ, Elaborated by the Author using Phyton

Figure 04: Risk Assessment Summary



Source: Bloomberg, Capital IQ, and Authors Analysis using Phyton

2. Business Description

2.1 COMPANY OVERVIEW

Wacker Chemie AG, headquartered in Munich, Germany, is a **leading global chemical** company that operates in diverse industries, providing innovative solutions and products. With a comprehensive portfolio, Wacker serves sectors such as **construction, automotive, electronics, healthcare, and consumer goods**. The company is renowned for its expertise in **silicones, polymers, and specialty chemicals**.

2.1.1 History of the company:

WACKER's history traces back to 1914, giving the company a **legacy of 110 years**. Here's a concise summary of key milestones reflecting its evolution in technology, innovation, global presence, and sustainable development.

From 1914 to 1918, WACKER focused on electricity-related industries, expanding its capabilities with a **plant in Burghausen**, producing **acetylaldehyde and acetic acid** (1916). By 1917, the start of **acetone production** for the war effort brought WACKER international prominence.

From 1918 to 1939, WACKER diversified and achieved technological breakthroughs, introducing **WACKER Shellac, the first plastic made from acetylaldehyde**. The founder, Alexander von Wacker, died in 1922. In 1930, the origination of **VINNAPAS** production laid the foundation for **WACKER's POLYMERS** division. By 1935, WACKER developed the **polymerization process for PVC**, and during World War II, produced **essential chemicals**.

From 1945 to 1957, WACKER recovered post-war and made technological advancements, resisting plant destruction in 1945. **Research into silanes and silicones** began in 1947. In 1953, Dr. Eduard Enk founded the **semiconductor business, leading to the first hyper-pure silicon production** in 1955 and new facilities in 1957.

Between 1960 and 1978, WACKER introduced new processes and expanded internationally. The second WACKER process revolutionized acetylaldehyde and acetic acid production in 1960. In 1968, **WACKER transitioned from coal to petrochemicals**. The **first overseas production** started in 1965, with **HDK® pyrogenic silica** becoming a bestseller in 1972. In 1978, WACKER founded **Siltronic, entering the semiconductor industry**.

From 1980 to 1998, WACKER focused on product innovations and global expansion. **Liquid silicone rubber** was introduced in 1980, and by 1983, **WACKER had entered Asian markets**. Biological wastewater treatment expanded in 1985, and **logistics and distribution were enhanced** with the founding of DRAWIN Vertriebs-GmbH in 1987. In 1990, WACKER began producing **bioengineered products**, established new headquarters in Munich in 1992, and **expanded silicone production** with a new site in **Saxony** in 1998.

From 2000 to 2010, WACKER made technological advancements and global initiatives. The company joined the "Foundation for Remembrance, Responsibility and the Future" in 2000. In 2004, a **pilot plant for granular polysilicon** was constructed. The WACKER Relief Fund was founded in 2005. **WACKER went public on the Frankfurt Stock Exchange** in 2006. In 2008, a **joint facility with Samsung began manufacturing wafers**. In 2010, WACKER **acquired a facility in Norway and partnered with Dow Corning for a silicones production site in China**.

From 2011 to 2024, WACKER expanded globally and focused on sustainable development. The Shanghai Center opened in 2012. **Siltronic AG went public** and WACKER won Company of the Year in 2015. In 2016, WACKER made its **largest investment with a new polysilicon site in the USA**. In 2017, the company **sold a majority stake in Siltronic AG**. In 2018, WACKER **acquired a Dutch plant, expanded in Spain**, and led in producing **renewable-based dispersions**. In 2019, a **new spray dryer and a silicon-metal production plant in Norway increased capacity**.

In 2020, WACKER contributed to the **coronavirus fight** by **donating isopropyl alcohol** and **supporting charitable institutions**. **Investments in biologics and vaccines** were made. Dr. Christian Hartel became president and CEO in 2021, with

Figure 05: Timeline Photo (01/06)



Source: Wacker Chemie Website

Figure 06: Timeline Photo (02/06)



Source: Wacker Chemie Website

Figure 07: Timeline Photo (03/06)



Source: Wacker Chemie Website

Figure 08: Timeline Photo (04/06)



Source: Wacker Chemie Website

Figure 09: Timeline Photo (05/06)



Source: Wacker Chemie Website

Figure 10: Timeline Photo (06/06)



Source: Wacker Chemie Website

the company acquiring Genopis Inc. and aiming for **net-zero emissions by 2045**. In 2022, WACKER partnered with the German Government on pandemic preparedness and opened a new site in India. In 2023, WACKER strengthened its **biotechnology business** by purchasing ADL BioPharma in Spain.

2.1.2 Geographic and Business Segments:

Wacker Chemie has the following four segments: **Silicones, Polymers, BioSolutions and Polysilicon** and the operations are highly international, with a presence in **North America, South America, Europe, Asia and Oceania**. (Figures 11 – 14)

WACKER SILICONES is the business division with the **broadest range of products**. Two raw materials – silicon metal and methanol – are the basis for making over 2,800 products in seven product groups: silanes, siloxanes, silicone fluids, silicone emulsions, silicone elastomers, silicon resins and pyrogenic silica. The products are extremely durable, stress-resistant, water-repellent and UV-resistant. **This business segment is considered as the second leader globally and leader of the market in Europe**. In building-protection silicones, WACKER is the global market leader. **Silicones are used in every major industry due to their versatile properties. The greatest growth potential is in Asia**. The competitive position can be numbered as the following: 1) Dow; 2) Wacker; 3) Momentive. (Figure 15)

WACKER POLYMERS makes “state-of-the-art” (the most advanced innovative, and up to date in terms of technology, quality, and performance) binders and polymeric additives, such as dispersible polymer powders and dispersions. These products are used in **diverse industrial applications or as basic chemicals**. The main customer for polymer binders is the construction industry. Other customers include the paint, coating, paper and adhesive industries. This division is considered the **world’s largest producer, and also the only company in the market with a complete supply chain for dispersions and dispersible polymer powders in Europe, the Americas and Asia**. Again, **Asia offers the largest growth potential**. The competitive position can be numbered as the following: 1) Wacker; 2) Celanese; 3) Dairen. (Figure 16)

WACKER BIOSOLUTIONS supplies customized biotech and catalog products for fine chemicals. The segment focuses on customer-specific solutions in sectors with strong growth, such as food ingredients, pharmaceutical actives, and agrochemicals. The company have achieved a **strong market position in contract manufacturing of pharmaceutical proteins, plasmid DNA, live microbial products (LMPs) and vaccines based on bacteria and expanding it**. WACKER BIOSOLUTIONS is the **global leader in cyclodextrins and vegetarian-grade cysteine**. The company also engages polyvinyl acetate solid resins (for gum base) and acetylacetone. (Figure 17)

WACKER POLYSILICON is one of the **leading producers of hyper pure polysilicon worldwide, the division is considered as the global leader for both polysilicon supplied to the semiconductor sector and n-type monocrystalline silicon used in highly efficient solar cells**. Due to the development of the market environment in the global solar industry, competition in this business remains very intense. The competitive position can be numbered as the following: 1) Wacker; 2) Hemlock; 3) Tokuyama. (Figure 18)

2.2 HISTORICAL REVENUES AND EARNINGS OVERVIEW

2.2.1 Revenues by Segments:

In 2023, the WACKER Group saw a significant sales decline across all divisions due to lower selling prices. WACKER SILICONES and WACKER POLYMERS both experienced drops in sales volumes, while WACKER BIOSOLUTIONS saw a modest 2 % increase. Sales at WACKER POLYSILICON dropped, mainly due to reduced prices and volumes for solar-grade polysilicon. (Figure 19)

Specifically, **WACKER SILICONES** achieved €2.60 billion in sales in FY21, €3.45 billion in FY22 (33% increase YoY), and **€2.74 billion in FY23 (21% decrease YoY)**. **WACKER POLYMERS** reported €1.67 billion in sales in FY21, €2.00 billion in FY22 (19% increase YoY), and **€1.58 billion in FY23 (21% decrease YoY)**. **WACKER BIOSOLUTIONS** saw sales of €296.4 million in FY21, €331.1 million in FY22 (12% increase YoY), and **€337.2 million in FY23 (2% increase YoY)**.

Figure 11: WACKER's Production and Sales Sites and Technical Competence Centers: North and South America



Source: Wacker Chemie, 2022 Annual Report

Figure 12: WACKER's Production and Sales Sites and Technical Competence Centers: Europe and Germany



Source: Wacker Chemie, 2022 Annual Report

Figure 13: WACKER's Production and Sales Sites and Technical Competence Centers: Asia



Source: Wacker Chemie, 2022 Annual Report

Figure 14: WACKER's Production and Sales Sites and Technical Competence Centers: Oceania



Source: Wacker Chemie, 2022 Annual Report

WACKER POLYSILICON achieved €1.53 billion in sales in FY21, €2.29 billion in FY22 (50% increase YoY), and **€1.60 billion in FY23 (30% decrease YoY)**.

2.2.2 Revenues by regions

WACKER's global reach is evident, with approximately 85% of its FY23 revenue originating from international operations. Although there was substantial growth in Asian markets in 2022, this trend somewhat reversed in 2023. **Asia now represents 43% of the revenue**, down from 45% in FY22, with sales figures of €2.64 billion in FY21 (56.25% increase), €3.69 billion in FY22 (40.1% increase), and **€2.75 billion in FY23 (a 25.6% decrease)**. **Europe represents 35.9% of the revenue**, up from 34.5% in FY22, with sales of €2.37 billion in FY21 (23.01% increase), €2.83 billion in FY22 (19.40% increase), and **€2.30 billion in FY23 (18.70% decrease)**. **The Americas account for 16.3% of the revenue**, compared to 15.7% in FY22, with sales figures of €896 million in FY21 (7.53% increase), €1.29 billion in FY22 (46.5% increase), and **€1.04 billion in FY23 (19.0% decrease)**. **Other regions remain consistent at 4.8%** in both periods, with sales of €304 million in FY21 (24.4% increase), €398.2 million in FY22 (31% increase), and **€310.5 million in FY23 (22% decrease)**. (Figure 20)

2.2.3 Earnings

EBITDA declined by 60% YoY, influenced by the **substantial drop in sales and persistent high costs for raw materials and energy**. Additionally, **low plant-utilization rates** resulting from the sales decline had a **negative impact**. However, WACKER implemented **cost-saving measures** as part of its ongoing efficiency efforts, which **affected positively**. EBITDA was affected by provisions for **contingent losses from outstanding delivery obligations and inventory write-downs**. Unlike the previous year, there was **no reversal of an impairment loss** on an equity-accounted investment to boost EBITDA. Depreciation and amortization for 2023 amounted to €418.7 million, slightly higher than the €402.1 million recorded in 2022. (Figure 21)

In FY23, WACKER reported an **EBITDA of €823.6 million**, down from €2.08 billion in FY22. The **EBITDA margin decreased to 12.9%** from 25.4% the previous year. **EBIT for FY23 was €404.9 million**, a significant drop from €1.68 billion in FY22, with the **EBIT margin falling to 6.3%** from 20.5%. (Figure 21)

The **gross profit from sales decreased by 50% YoY**. Despite leveraging efficiency gains to mitigate the cost of goods sold, persistently high costs for raw materials and energy, along with low plant-utilization rates due to the sales decline, significantly reduced the **gross margin**. Consequently, the Group's **cost-of-sales ratio increased from 74% to 83% YoY**. Other functional costs (selling, R&D and general administrative expenses) decreased by 1% YoY.

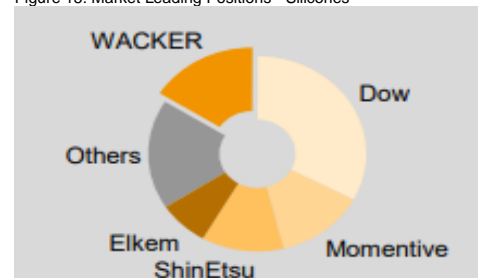
In FY23, **WACKER's gross profit was €1.08 billion**, down from €2.16 billion in FY22. The **cost of goods sold was €5.32 billion** compared to €6.05 billion the previous year. The **gross margin decreased to 16.9%** from 26.3%. **Functional costs were €669.1 million**, slightly down from €704.1 million in FY22.

In 2023, **other operating income and expenses totaled €-30.2 million**, contrasting with €20.4 million in FY22. Income from canceled contracts was **€10.5 million**, down from €29.1 million, while **insurance compensation amounted to €21.9 million**. Expenses rose by €39.2 million due to provisions for contingent losses. **Foreign currency results improved to €1.1 million** from €-15.5 million in FY22.

Investment income notably decreased from the previous year, mainly due to lower returns from Siltronic AG. In contrast, **WACKER's financial performance improved**, with higher interest income and relatively stable interest expenses. The **effective tax rate decreased due to tax-free income and previous-year gains**. The **drop in ROCE was driven by lower EBIT and increased capital employed**.

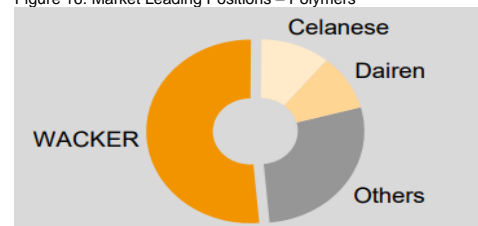
In FY23, **results from investments were €51.2 million**, a decrease from €201.7 million in FY22. **The financial result improved to €-17.9 million** compared to €-62.6 million in FY22. **Income tax expenses were €59.7 million** in FY23, down from €334.6 million in FY22, resulting in an **effective tax rate of 15.4%** in FY23 and 20.7% in FY22. **Net income for FY23 was €327.3 million**, significantly lower than the €1.28 billion reported in FY22. **ROCE stood at 6.9%** in FY23, a decrease from 34.7% in FY22.

Figure 15: Market Leading Positions - Silicones



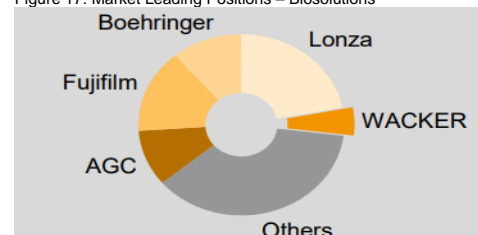
Source: Wacker Chemie, 2023 Fact Book - WACKER JV participations fully consolidated, Industry Announcements, 1) Frost & Sullivan 2) Grand View Research 3) Based on Sales (incl. Wacker Estimates)

Figure 16: Market Leading Positions - Polymers



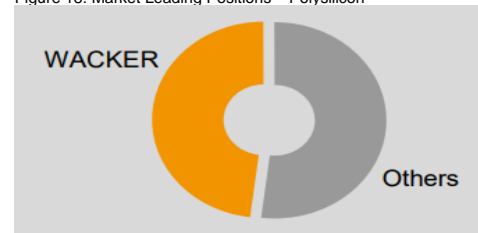
Source: Wacker Chemie, 2023 Fact Book - WACKER JV participations fully consolidated, Industry Announcements, 1) Frost & Sullivan 2) Grand View Research 3) Based on Sales (incl. Wacker Estimates)

Figure 17: Market Leading Positions - Biosolutions



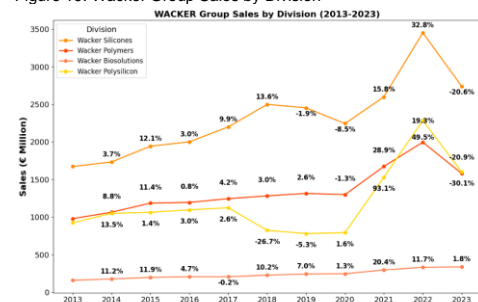
Source: Wacker Chemie, 2023 Fact Book - WACKER JV participations fully consolidated, Industry Announcements, 1) Frost & Sullivan 2) Grand View Research 3) Based on Sales (incl. Wacker Estimates)

Figure 18: Market Leading Positions - Polysilicon



Source: Wacker Chemie, 2023 Fact Book - WACKER JV participations fully consolidated, Industry Announcements, 1) Frost & Sullivan 2) Grand View Research 3) Based on Sales (incl. Wacker Estimates)

Figure 19: Wacker Group Sales by Division



Source: Wacker Chemie, 2023 Annual Report, Elaborated by the Author

2.3 KEY DRIVERS OF PROFITABILITY

Wacker Chemie shares the **same key drivers of profitability** of the specialty chemicals industry and its peers. The Company's major key drivers of profitability are:

Revenue growth: Production and Price - Higher Selling Prices: WACKER's profitability is influenced by selling prices in every segment, higher selling prices were identified as a primary growth driver across all business divisions. **Global Reach:** The company's strong international presence, with approximately 85% of business coming from international operations, contributes to its overall profitability. Sales growth in key regions such as Asia and the Americas has positively impacted the company's financial performance. For the production, **Wacker's plant Utilization** in 2022 is represented by Wacker Silicones: 92% plant utilization rate, Wacker Polymers: 85% utilization rate and Wacker Polysilicon: 100% plant utilization rate.

Innovation and Research & Development (R&D): WACKER's R&D ratio – research and development spending as a percentage of Group sales – was 2.2% in FY22. While that was less than the previous year (2021: 2.6%), R&D spending was higher in absolute terms. In 2022, WACKER filed 53 patents, maintaining around 3,300 active patents globally. The company invests in enhancing energy efficiency and developing new technologies, focusing on silane facilities, polymer binders, and innovation management. Key R&D areas include medicine, biotechnology, energy, electronics, automotive, consumer care, and construction. The New Solutions initiative aims to develop superior solutions for various applications, with government-funded projects in process development, electromobility, lightweight construction, carbon recycling, AI, and biotechnology. Notable projects include a long-acting immunosuppressive anti-CD40 antibody, lithium-ion battery configurations, human milk oligosaccharide production, and antimicrobial peptides. (Figure 22)

Cost Management: WACKER's ability to achieve efficiency gains, particularly in controlling non-personnel and functional costs, contributes to improved profitability. These efficiency measures help mitigate the impact of rising raw-material, energy, and logistics costs.

Global Economic Conditions: WACKER's profitability is influenced by broader economic conditions, including global demand for its products and the performance of key industries it serves, such as chemicals, silicones, and polymers.

Wacker has **highly integrated operations based on five key raw materials: methanol, silicon metal, ethylene, acetic acid, and starch/dextrose.** The upstream, downstream, and industry processes for each key raw material are described and represented by the flowchart in *Appendix 01*.

2.4 SECTOR-SPECIFIC CONDITIONS

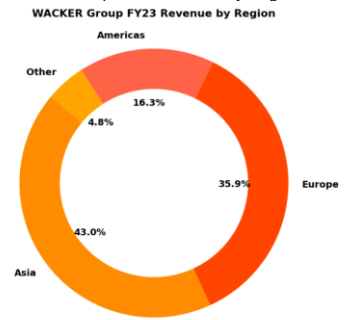
The chemical industry encountered significant global challenges in 2023, marked by **high energy and raw material prices alongside declining orders**, hindering production in several countries. The German Chemical Industry Association (VCI) reported a mere **1% growth in global chemical production**, with **Europe, the Americas, and many Asian economies experiencing a slowdown.** Conversely, **China and Russia reported positive growth trends.** (Figures 23 to 29)

Germany's chemical-pharmaceutical industry, facing weak economic trends and structural issues, witnessed an **8% decline in production**, reaching **11% excluding pharmaceuticals.** Capacity utilization remained below normal levels, with **over 40% of surveyed companies reporting weaker profits or losses.** Sales in the sector had fallen by 12% to €230 billion.

Meanwhile, the **global construction industry** experienced a **downturn due to rising interest and real estate rates**, resulting in a **2.4% decrease in total global construction volumes** to approximately **US\$9.23 trillion.** In contrast, the **automotive industry reported increased global car markets**, with growth recorded in **Europe, the USA, and China.** (Table 01)

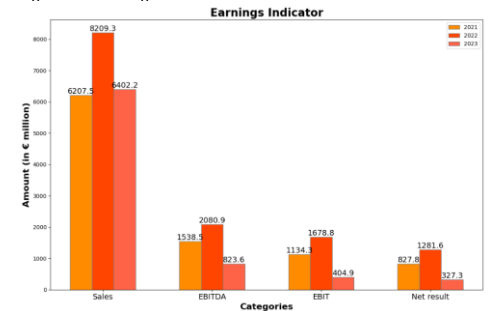
The **solar industry continued to expand**, installing around **410 gigawatts of new capacity globally**, and the **photovoltaic (PV) sector emerged as a vital**

Figure 20: WACKER Group FY23 Revenue by Region



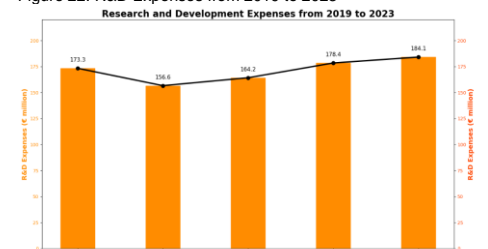
Source: Wacker Chemie, 2023 Annual Report, Elaborated by the Author using Phytion

Figure 21: Earnings Indicator



Source: Wacker Chemie, 2023 Annual Report, Elaborated by the Author using Phytion

Figure 22: R&D Expenses from 2019 to 2023



Source: Wacker Chemie, 2023 Annual Report, Elaborated by the Author using Phytion

Table 01: Growth Rate in Construction of Residential Buildings (New and Existing) by Region in 2023.

Region	Growth Rate (%)
Worldwide	-4.3%
Asia	-4.3%
Western Europe	-5.9%
North America	-5.1%
Middle East/ Africa	2.4%
Eastern Europe	-3.8%
South America	-0.9%

Source: Wacker Chemie, 2023 Annual Report, Germany's Federal Marktdaten GmbH, Global Building Monitor 02/2024

Table 02: Installation of New PV Capacity (MW)

Country/Region	2023	2022	%
Germany	14,300	7,400	93.0%
Spain	8,200	8,400	-2.0%
Rest of Europe	34,500	27,200	27.0%
USA	33,000	20,200	63.0%
Japan	7,000	6,500	8.0%
China	216,900	87,400	148.0%
India	10,000	14,000	-29.0%
Other regions	86,100	78,900	9.0%
Total	410,000	250,000	64.0%

Source: Wacker Chemie, 2023 Annual Report, Germany's Federal Network Agency, SolarPower Europe (SPE), Solar Energy Industries Association (SEIA), China National Energy Administration, market studies, WACKER's own market research

Table 03: Wacker's Key Customers Sectors

Sector	2023	2024
Chemicals	Decline	Decline
Construction (residential buildings)	Decline	Decline
Automotive	Growth	Growth
Photovoltaics	Growth	Growth

Source: Wacker Chemie, Website

component of the global energy supply. (Tables 02 and 03) Despite a **drop in most raw material prices in 2023**, energy prices remained high, with coal and natural gas prices stabilizing in Europe. **Electric and gas prices remained double their pre-pandemic levels**, impacting production costs.

2.5 COMPANY STRATEGIES

WACKER concentrates on five main strategic objectives. These include attaining sustainability, taking the lead in their respective industries, and experiencing lucrative expansion. **WACKER unveiled new strategic objectives for the Group and each business unit in late March 2022, which will direct them through 2030.** The company's mission statement, "Our solutions make a better world for generations," ties together its operational and strategic goals. The company's 2030 goals are as follows:

Accelerate Growth: With over €10 billion in sales targeted by 2030, WACKER wants to accelerate their sales growth to 1.5 to 2 times the historical pace of 4 to 5 percent each year.

Boost Profitability: By 2030, the aim is to achieve EBITDA margins of more than 20% in the chemical business, about 25% at WACKER BIOSOLUTIONS, and more than 30% at WACKER POLYSILICON. Additionally, they want to raise WACKER POLYSILICON's and the chemical divisions' return on capital employed (ROCE) to more than twice the cost of capital, with a far greater ROCE at WACKER BIOSOLUTIONS.

Boost Capital Expenditures: WACKER is increasing its yearly investment spending to more than €400 million in order to meet customer demand through capacity expansion. They will earn around €80 million a year for their biotech activities and almost €100 million a year for semiconductor applications from their polysilicon business.

Sustainability as a Priority: WACKER helps its clients become more sustainable through its products and solutions. Presently, two-thirds of their product line helps provide environmentally friendly solutions. Their objective is to use the increasing demand in this domain to stimulate further expansion. WACKER announced its 2030 sustainability targets in December 2021. The company's main objectives are to cut its total greenhouse gas emissions in half and reach net-zero carbon emissions by 2045.

2.5.1 Company Goals by Segment

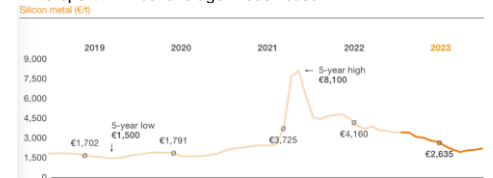
It is anticipated that sales growth will quicken at WACKER POLYMERS and WACKER SILICONES, the two chemical divisions. Simultaneously, more profitability is expected; by 2030, the EBITDA margin is expected to surpass 20%, compared with previous aim of 16%. It is intended for the ROCE to exceed the cost of capital by a margin. **Capacity Expansion in the regions and markets where costumers operate in planned to propel development in specialties, and investment spending is expected to quadruple to more than € 400 million a year.**

WACKER SILICONES is focusing on high-margin growth sectors as it methodically pursues its specialty chemicals strategy. Through local product development of tailored solutions and technical services, this strategy aims to improve customer proximity in several regions. **The investment in SICO Performance Material, a Chinese maker of specialty silanes, supports this plan.** With new plant in Panagarh, the division is further solidifying its position as the market leader in India.

WACKER POLYMERS is promoting market expansion internationally. At its Nanjing, China, location, the division more than doubled its production capacity between 2020 and 2023. In addition to customer-specific solutions, the portfolio of sustainable product solutions will be broadened to include those based on renewable raw resources.

By 2030, WACKER BIOSOLUTIONS is expected to climb to new heights as a result of strategic acquisitions and organic expansion, with yearly sales expected to reach around €1 billion. It is anticipated an EBITDA margin higher than 25%. This plan is centered on the biopharmaceuticals industry, and an mRNA

Figure 23: Market-Price Trends for WACKER's Key Raw Materials in Europe: Ø Annual average in each case



Source: Wacker Chemie, Website; CRU

Figure 24: Market-Price Trends for WACKER's Key Raw Materials in Europe: Ø Annual average in each case



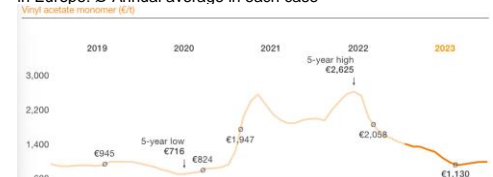
Source: Wacker Chemie Website; CMA

Figure 25: Market-Price Trends for WACKER's Key Raw Materials in Europe: Ø Annual average in each case



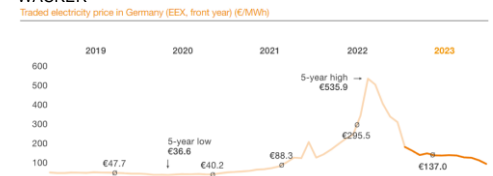
Source: Wacker Chemie Website; ICIS

Figure 26: Market-Price Trends for WACKER's Key Raw Materials in Europe: Ø Annual average in each case



Source: Wacker Chemie Website; ICIS

Figure 27: Market-Price Trends for Energy Sources Relevant to WACKER



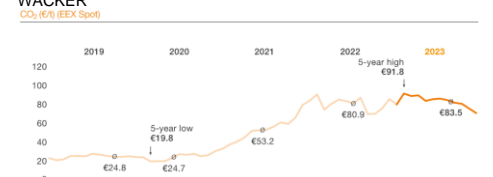
Source: Wacker Chemie Website, Montel

Figure 28: Market-Price Trends for Energy Sources Relevant to WACKER



Source: Wacker Chemie Website, Montel

Figure 29: Market-Price Trends for Energy Sources Relevant to WACKER



Source: Wacker Chemie Website, Montel

competency center will be established by expanding the Halle facility. **The purchase of ADL BioPharma S.L.U. in León, northern Spain, in 2023 serves as a highlight for the second pillar, which is the fermentation-based synthesis of ingredients for dietary supplements.** The division intends to invest more than €80 million a year in order to increase the scope of its product offering through partnerships, internal innovation, and additional acquisitions.

By 2030, WACKER POLYSILICON anticipates having an EBITDA margin exceeding 30% and a ROCE greater than twice the cost of capital. The division wants to increase its proportion of overall output that is semiconductor-grade hyperpure silicon in order to bolster its position, especially in the semiconductor industry. It is anticipated that investments will cost about €100 million a year.

2.6 SHAREHOLDER STRUCTURE AND DIVIDEND POLICY

2.6.1 Detailed ownership

The top holders are **Dr. Alexander Wacker Familiengesellschaft mbH, Munich**, maintains its position as the predominant shareholder of Wacker Chemie AG, holding approximately **52% of the voting shares**. **Blue Elephant Holding GmbH (Bad Wiessee, Germany)** also had no voting-share changes to report in 2022, with its holding in Wacker Chemie AG remaining at **over 10%**. The next top holder position is held by **Capital Research and Management Company**, with approximately 3%. Following in the list is **Bank of America Corporation, Asset management Arm and RobecoSAM AG**, both with a percentage of Common Shares Outstanding closer to **2% each**. (Figure 30)

The activist investors are **Royal London Asset Management Ltd and Causeway Capital Management LLC**. The institutional ownership is given by six categories: **Traditional investment managers (87,74% of inst. Ownership)**, **Banks / Investment Banks (11,37%)**, **Hedge Fund Managers <5% stake (0,59%)**, **Family Offices / Trusts (0,22%)**, **VC/PE Firms <5% stake (0,05)**, **Government Pension Sponsors (0,02%)**.

2.6.2 Dividend Policy and Payment

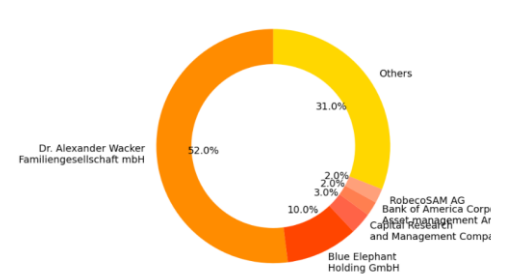
Despite facing significant market ups and downs last year, WACKER remained committed to shareholder appreciation, ensuring their participation in the company's success. Accordingly, the Executive and Supervisory Boards have proposed a **dividend of €3.00 per share at the Annual Shareholders' Meeting**, aiming to distribute approximately half of the net income to shareholders. **This maintains a distribution ratio of about 47.5%, consistent with the previous year's ratio of 47.6%.** Despite challenges, the company maintains a similar distribution ratio.

At the last Annual Shareholders meeting, all proposals from the Executive Board and Supervisory Board received substantial support. The meeting approved a **dividend of €12.00 per dividend-bearing share for 2022**, a significant increase compared to €8.00 in 2021 and €2.00 in 2020. **The dividend yield based on WACKER's average share price in 2023 was 3.0%, down from 8.6% in FY22 (2021: 6.0%).** The industry average dividend yield is 2.4%, and the average between peers is 2.8%, **Wacker is above both averages.** (Figures 31 and 32)

2.7 WACKER STOCK

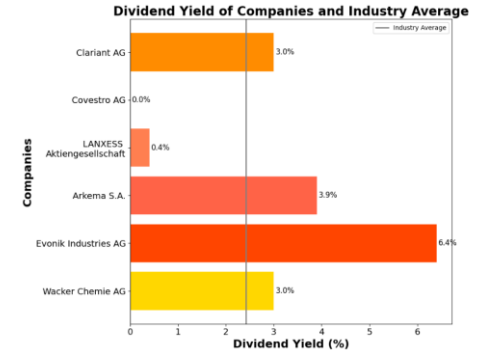
Stock Performance: In 2023, WACKER's stock experienced significant fluctuations influenced by various factors such as geopolitical crises, fiscal policies, and inflation. The year began with optimism, reflecting speculation about government initiatives and stimulus measures. However, the absence of concrete incentives led to market disillusionment, impacting stock performance negatively. **WACKER stock opened at €122.75 and reached a high of €159.25 before closing at €114.30 at the end of the year.** These fluctuations were emblematic of the broader challenges faced by the global economy, affecting WACKER's sales and earnings in the first half of the year. During 2022, WACKER stock exhibited the following trends: it began the year at €131.60 (closing price on December 30, 2021),

Figure 30: Top Holders of Wacker Chemie AG



Source: Capital IQ, elaborated by the Author using Phyton

Figure 31: Dividend Yield of Peer Companies and Industry Average



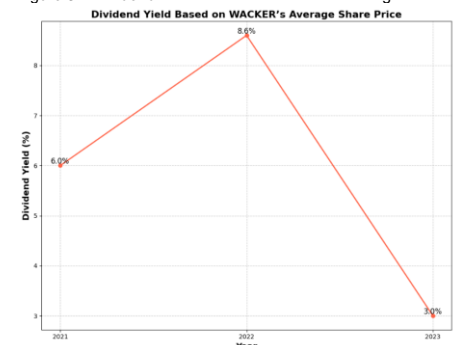
Source: Capital IQ, elaborated by the Author using Phyton

Table 04: Dividend Yield of Peer Companies and Industry Average

Dividend Yield	2023
Wacker Chemie AG	3.0%
Evonik Industries AG	6.4%
Arkema S.A.	3.9%
LANXESS Aktiengesellschaft	0.4%
Covestro AG	0.0%
Clariant AG	3.0%
Industry Average	2.4%

Source: Capital IQ, elaborated by the Author

Figure 32: Dividend Yield based on Wacker's Average Share Price



Source: Capital IQ, elaborated by the Author using Phyton

Figure 33: Stock Price Evolution



Source: Capital IQ, elaborated by the Author using Phyton

peaked at €183.90 on June 8, 2022, and reached a low of €100.90 on October 14. The year concluded with WACKER stock trading at a closing price of €119.40 on December 30, 2022. **Notably, amidst market challenges, including a 12% decline in Germany's DAX index and a 28% drop in the MDAX in 2022, WACKER stock demonstrated resilience with a comparatively modest decrease of around 9% during the same period.** (Figure 33 and 34)

Market Capitalization and Weighting: **WACKER's market capitalization and weighting within the MDAX index underwent changes in 2023.** The company's year-end market capitalization, based on shares outstanding, stood at **€5.67 billion, positioning it as the 31st company in the MDAX.** This change in ranking reflected the dynamics of the market landscape and the company's performance relative to its peers. As of the 2022 year-end, WACKER's market capitalization, stood at **€6.23 billion (compared to €6.97 billion on December 30, 2021).** This positioned WACKER at the time with an MDAX weighting of **1.23%, set at the 32nd rank (based on free float market capitalization) among the 50 companies in the index.**

Trading Activity: **Throughout 2023, trading activity for WACKER stock saw fluctuations in volume and turnover.** Despite the challenging market conditions, the **average daily trading volume increased slightly to approximately 138,859 shares (FY22: 130,756 shares), with a daily turnover of €18.27 million (FY22: 18.1 million, FY21: €27.9 million).** These figures indicated continued investor interest in WACKER stock, even among market uncertainty and volatility.

3. Management and ESG

3.1 MANAGEMENT

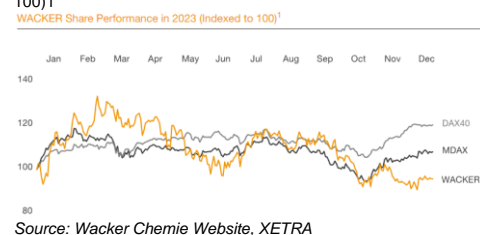
3.1.1 Executive Board Members

Dr. Tobias Ohler: CFO & Member of the Executive Board. Dr. Tobias Ohler has been a Member of the Executive Board at Wacker Chemie AG since January 2013 and has been its the Chief Financial Officer since November 1, 2015. Dr. Ohler served as its Personnel Director and Member of Executive Board since February 2010. He served as Head of Raw Materials Procurement at Wacker Chemie AG since December 31, 2012 and its Head of Corporate Controlling until December 31, 2012. He serves as Member of Supervisory Board at Pensionskasse der Wacker Chemie VV AG. He served as Personnel Director of Wacker Chemie AG. Dr. Ohler served as an Executive Vice President and Chief Financial Officer of Siltronic AG since February 2010. He served as Consultant and Associate Principal at McKinsey & Co. since 1997; Senior Vice President of Controlling at Wacker Chemie since 2005 and Senior Vice President of Raw Materials Procurement at Wacker Chemie since 2008. He served as Head of Corporate Controlling at Wacker Chemie AG. He is a Member of the Supervisory Board at Wacker Chemie VVaG Pension Fund. He has been Chairman of Supervisory Board at Siltronic AG since December 12, 2015. He has been a Member of Supervisory Board at Siltronic AG since February 26, 2013. Dr. Ohler holds a Maitrise in Economics, Aix-Marseille in 1995; Master in Business Administration and Industrial Engineering, Karlsruhe and Sydney in 1997 and PhD in Economics at the University of Oldenburg in 2000. (Figure 36)

Angela Wörl: Head of Human Resource, Personnel Director & Member of Executive Board. Ms. Angela Wörl serves as Head of Human Resource at Wacker Chemie AG since November 2015 and serves as Personnel Director & Member of Executive Board since May 12, 2021. She served as a Member of Supervisory Board at Siltronic AG since January 4, 2016 until April 19, 2018. Ms. Wörl studied law at Ludwig-Maximilians University in Munich. After occupying various positions at courts, public authorities and legal firms in Germany and the USA, she joined WACKER's Legal department in 1995. In 2003, she assumed responsibility for international HR assignments and HR development at WACKER's HR corporate department. After further management roles in HR at Wacker, she left WACKER temporarily in 2011, spending almost three years in South Korea and China. (Figure 37)

Dr. Christian Hartel: CEO, President & Member of Executive Board. Dr. Christian Hartel has been Member of Executive Board at Wacker Chemie AG since

Figure 34: WACKER Share Performance in 2023 (Indexed to 100)1



Source: Wacker Chemie Website, XETRA

Table 05: Useful Information on Wacker Stock

Useful Information on Wacker Stock	
ISIN	DE000WCH8881
WKN	WCH888
Frankfurt Stock Exchange	WCH
Bloomberg	CHM/WCH.GR
Reuters	CHE/WCHG.DE
Initial Public Offering	April 10, 2006
Capital Stock	€280,763,000
Trading Segment	Regulated market (Prime Standard)
Category of Shares	Bearer Shares
Number of Shares Outstanding	49,677,983
Paying Agent	Deutsche Bank, Frankfurt/Main

Source: Wacker Chemie Website

Figure 35: WACKER Share Performance in 2023



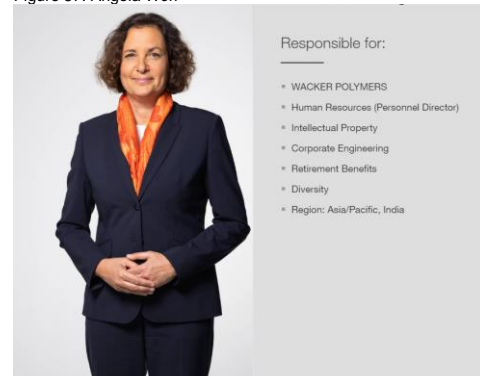
Source: Wacker Chemie Website, XETRA

Figure 36: Dr. Tobias Ohler



Source: Wacker Chemie Website

Figure 37: Angela Wörl



Source: Wacker Chemie Website

November 1, 2015, President and Chief Executive Officer since May 12, 2021 and served as its President of Wacker Silicones since May 2012. Dr. Hartel served as Head of The Wacker Silicones Division at Wacker Chemie AG. Dr. Hartel studied chemistry at the University of Constance. After earning his doctorate at the universities of Geneva and Frankfurt am Main, he began his professional career at management consultants Bain & Company in 2000, moving to Corporate Development at WACKER in 2003. After various management positions at the WACKER BIOSOLUTIONS and WACKER SILICONES divisions, he became head of Raw Materials Procurement in 2010. (Figure 38)

Figure 38: Dr. Christian Hartel



Source: Wacker Chemie Website

Dr. Christian Kirsten: completed his doctoral studies in chemistry at Düsseldorf in 1997. He commenced his career at Henkel AG & Co. KGaA within Central Research. From 2000 to 2006, he gained experience in management consulting and the automotive sector. Returning to Henkel, he oversaw Global Raw Materials Procurement and later led the global adhesives business for automotive and metal industries, based in Shanghai from 2015 to 2017. In 2018, Dr. Kirsten expanded his role to encompass Henkel's entire adhesives business and assumed the position of President for Henkel in Europe. He joined the Executive Board of Wacker Chemie AG in May 2023. (Figure 39)

Figure 39: Dr. Christian Kirsten



Source: Wacker Chemie Website

3.1.2 Management System and Compensation Plans

The **compensation plan** for the **Executive Board** of Wacker Chemie AG is designed to align with the company's strategic objectives and long-term growth. It includes both **Short-Term Incentives (STI)** and **Long-Term Incentives (LTI)** based on financial performance criteria such as **Net Cash Flow (NCF)**, **Business Value Contribution (BVC)**, **EBITDA margin**, and **Return on Capital Employed (ROCE)**. These metrics ensure that executives are rewarded for achieving operational efficiency, profitability, and sustainable growth. Non-financial targets in the LTI also encompass strategic and **ESG goals**, including **sustainability, innovation, and digital transformation**, with sustainability goals targeting a **reduction in CO2 emissions by 20%** and **enhancing customer and employee satisfaction by 15%**.

Figure 40: Executive Board Members



Source: Wacker Chemie Website

The plan includes provisions for the **Supervisory Board** to **reduce or recover compensation** in case of breaches of duty or the company's **Code of Conduct**. Additionally, terms and conditions for **termination and severance payments** are clearly defined, **including non-compete clauses** and caps on severance payments. The Supervisory Board regularly reviews the appropriateness of compensation by comparing it with market standards and employee compensation, ensuring fairness and alignment with company performance. (Figures 41 and 42)

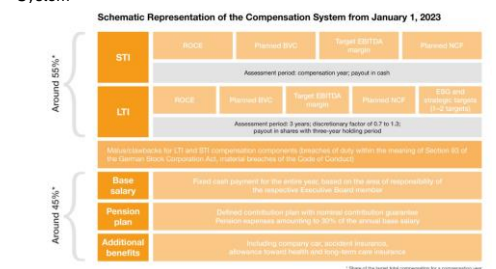
Figure 41: Group Structure in Terms of Managerial Responsibility
Group Structure in Terms of Managerial Responsibility



Source: Wacker Chemie, 2023 Annual Report

A key change from the previous plan is the emphasis on **non-financial targets** in the LTI, particularly **ESG goals**, which now include specific **sustainability targets** like **reducing CO2 emissions** and **enhancing customer and employee satisfaction**. Furthermore, the new plan introduces greater flexibility for the Supervisory Board to **deviate from the compensation system** during **exceptional circumstances**, such as **economic crises**, ensuring the company's resilience and long-term well-being. (Figure 43)

Figure 42: Schematic Representation of the Compensation System

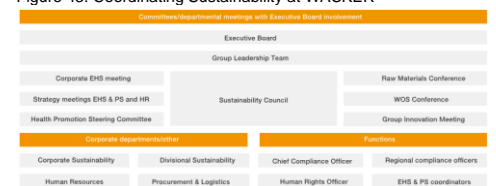


Source: Wacker Chemie, 2023 Annual Report

3.2 ESG

Emphasizing climate change as one of the most significant topics for the chemical industry is crucial. It is reasonable to consider adjustments to climate objectives, emissions, and other key areas, including circular economy practices and customer engagement. **While historically perceived as contributors to environmental harm, chemical companies, exemplified by entities like Wacker Chemie, possess a unique capacity to both be contributors to pollution and play a vital role in reducing CO2 emissions.** This paradox introduces complexity to the discourse but also presents opportunities to integrate ESG considerations as a criterion for stock picking within the sector.

Figure 43: Coordinating Sustainability at WACKER



Source: Wacker Chemie, 2023 Annual Report

3.2.1 ESG Ratings and Scores

When discussing ESG scores and ratings, it is important to emphasize that different agencies apply different methodologies and have a different range of

approaches, making the comparison a bit more challenging. Despite these discrepancies, it is possible to observe that the **EU27 chemical industry has made creditable progress, aligning with global sustainability goals and continuing to explore opportunities for further improvements.** The industry's dedication to cleaner technologies and energy efficiency is evident, reflected in various aspects such as reduced GHG emissions and advancements in energy consumption. Notable trends also include a **decline in gas and solid fuel consumption, a rise in renewable energy use, and a substantial improvement in energy efficiency metrics** (Hadrh and Cefic).

The **ESG rating for LSEG Data & Analytics, previously Refinitiv**, is as follows: For the fiscal year, WCH received an ESG score of **72.24 (Grade: B+)**. Over the last 5 years, the company has an average ESG score of **70.87** and a median ESG score of **72.24**. The Refinitiv ESG score is calculated as the sum of weighted individual pillar scores. For WCH, Environmental, Social, and Governance pillars are weighted at **39.60%, 37.98%, and 22.42%**, respectively, in ESG score weighting, consistent with companies within the Chemicals industry groups. WCH's controversies score of **100.00 (Grade: A+)** is calculated based on the total count of controversies related to the company, as collected by the Refinitiv ESG team and normalized based on the company's market capitalization. Discounted by its controversies, WCH received an ESG Combined score of **72.24 (Grade: B+)** for the year. (Figures 44 and 45)

The **ESG rating according to Bloomberg ESG Score is 3.62, ranging from 0 to 10, with the company above the peer median.** Concerning **environmental aspects**, the company is seen as a **leader**, with Bloomberg considering topics such as Energy Management, GHG Emissions Management, and Waste Management. For Climate Exposure and Air Quality, WCH is considered **above median**, while for Ecological Impact, it is considered **below median**, and for Sustainable product and Ecological impact, it is considered **lagging**. Regarding **social aspects**, the company is seen as **below median**, with Bloomberg considering topics such as Ethics & Compliance, Community Rights & Relations, and Operational Risk Management. For Product Quality Management and Occupational Health & Safety Management, the company is considered **lagging**. Regarding **governance**, the company is seen as a **leader**, with Bloomberg considering topics such as Executive Compensation. For Board Composition and Audit, WCH is considered **above median**, while for Shareholders Rights, it is considered **lagging**. (Table 06)

Additionally, the **ESG rating according to MSCI Rating is BBB, ranging from CCC to AAA, with the company above peer median.** The ESG rating according to Sustainalytics is **22.61, ranging from 100 to 0, with the company slightly above peer median.** Both are available at Bloomberg but without many disclosures.

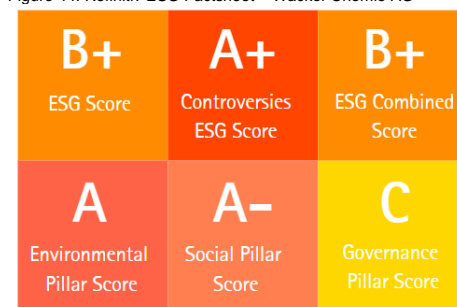
Alongside the industry's progress, it is noteworthy that the company has consistently been regarded as outperforming its peers across various agencies. While the journey towards achieving ideal metrics is extensive, with some areas still lagging, it is essential to emphasize that **WCH is actively working to establish itself as a standout and make significant strides in this domain.**

3.2.2 ESG Goals

In 2021, WACKER solidified its commitment to achieving climate neutrality by 2045, aligning with ambitious goals. By 2030, the company aims to **slash absolute greenhouse gas emissions by 50%**, demonstrating its adherence to science-based targets consistent with the Paris Agreement's 1.5 degrees Celsius limit. As a Race To Zero participant, WACKER voluntarily commits to the 1.5 °C target, providing transparent progress reports on its journey to climate neutrality.

The other sustainability goals of Wacker to be achieved until 2030, can be described as the following: **1) All products meeting defined sustainability criteria from WACKER Sustainable Solutions; 2) 15% reduction in specific energy consumption; 3) 100% of key suppliers adhering to sustainability standards; 4) 25% reduction in absolute upstream greenhouse gas emissions; 5) 15% reduction in specific water withdrawal; 6) Attaining zero annual chemical accidents with missed workdays and process-related accidents.**

Figure 44: Refinitiv ESG Factsheet – Wacker Chemie AG



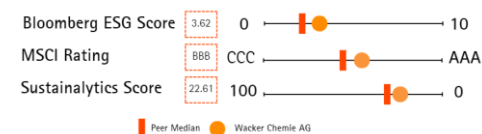
Source: LSEG Data & Analytics, adapted by the Author

Table 06: ESG Analysis – Bloomberg Score

ESG Analysis - Bloomberg	Score	Weight	Peer Ranking
Environmental	4.40	45.46%	Leading
Energy Management	6.90	24.61%	Leading
GHG Emissions Management	6.79	24.61%	Leading
Climate Exposure	0.75	13.23%	Above Median
Waste Management	6.37	10.63%	Leading
Water Management	1.78	10.63%	Lagging
Ecological Impact	1.70	7.51%	Below Median
Air Quality	4.29	7.16%	Above Median
Sustainable Product	0.00	1.62%	Lagging
Social	0.92	27.27%	Below Median
Occupational Health & Safety Management	0.72	37.07%	Lagging
Product Quality Management	0.00	37.07%	Lagging
Operational Risk Management	1.71	19.94%	Leading
Community Rights & Relations	10.00	3.20%	Leading
Ethics & Compliance	10.00	2.73%	Leading
Governance	5.91	27.27%	Leading
Board Composition	5.49	35.00%	Above Median
Executive Compensation	6.11	24.94%	Leading
Shareholder Rights	5.05	24.94%	Lagging
Audit	8.23	15.12%	Above Median

Source: Bloomberg, adapted by the Author

Figure 45: Bloomberg, MSCI Rating and Sustainalytics Score



Source: Bloomberg, adapted by the Author

Figure 46: The Three Pillars of SustainaBalance® (1/3)



Figure 47: The Three Pillars of SustainaBalance® (2/3)



Source: Wacker Chemie, 2023 Annual Report.

The **paramount sustainability goal** revolves around a **50% reduction in greenhouse gas emissions by 2030, irrespective of the company's growth**. Initial efforts focus on internal products and processes, with an increased investment budget for sustainable transformation supporting projects that reduce emissions, enhance circular economy practices, and diminish water consumption.

Critical to WACKER's sustainability efforts is the production of silicon metal, a key raw material. The **Holla site in Norway** plays a pivotal role, aiming for net-zero emissions. To achieve this, WACKER is **substituting coal with renewables, such as biocarbon from sustainable forests**. Plans include capturing and utilizing the biogenic CO2 in chemical production, with a pilot plant anticipated in 2023.

WACKER is actively **transitioning production sites to green electricity**, with the Holla site already procuring all its electricity from renewables in 2022. Plans involve extending this initiative to other production sites globally. Despite rising electricity consumption due to increased electrification, **WACKER is exploring fossil-free alternatives like heat pumps for steam generation**.

Figure 48: The Three Pillars of SustainaBalance® (3/3)



Collaboration Beyond

As a contributing member of society, we strive for a sustainable value chain together with all our partners.

Source: Wacker Chemie, 2023 Annual Report.

Table 07: Wacker's Sustainability Targets

SustainaBalance®		Sustainable Development Goals (SDGs)	Sustainability Indicator ¹	Base year	Target year	Target (%)	Status 2023
Value Up	Footprint Down	4, 7, 8, 9, 12	Net Zero	2020	2045	-100	-28
Value Up	Footprint Down	13, 17	Products meeting defined sustainability criteria ²	2020	2030	100	84
Value Up	Footprint Down	7, 9	Management positions held by women	2020	2030	-23	21
Value Up	Footprint Down	8	Management positions outside of Germany	2020	2030	-50	32
Value Up	Footprint Down	12, 13	Absolute greenhouse gas emissions ³	2020	2030	-50	-24
Value Up	Footprint Down	12, 13	Specific energy consumption (per metric ton of net production)	2020	2030	-15	+3
Value Up	Footprint Down	12	Specific water withdrawal (per metric ton of net production)	2020	2030	-15	+4
Value Up	Footprint Down	8, 12	Chemical accidents with missed workdays ⁴	Annual target	Annual target	0	2
Value Up	Footprint Down	8, 12	Severe process safety incidents ⁵	Annual target	Annual target	0	0
Value Up	Footprint Down	4, 17	Key suppliers' meeting sustainability criteria	2020	2030	100	79
Value Up	Footprint Down	13, 17	Absolute greenhouse gas emissions in upstream supply chains ⁶	2020	2030	-25	-38

¹ Scope 1 and 2 in accordance with GHG Protocol, science-based target.
² Absolute target.
³ In accordance with WACKER Process Safety Incidents, Severity Levels 1 and 2.
⁴ Consequence to 50 percent of the volume produced.
⁵ In accordance with Scope 3 GHG emissions from purchased goods and services (Cat. 1) and fuel- and energy-related emissions (Cat. 3), science-based target.

Source: Wacker Chemie, 2023 Annual Report.

Table 08: CO2 Emissions Reductions

	2023	2022
CO ₂ emissions (kt CO ₂)	2,755	3,235
CO ₂ emissions in % (vs. 2020)	76.9	89.2
Change in % (vs. 2020)	-24.0	-10.8

	2023	2022
CO ₂ emissions (kt CO ₂) ¹	3,288	4,262
CO ₂ emissions in % (vs. 2020)	62.1	80.5
Change in % (vs. 2020)	-37.9	-19.5

Source: Wacker Chemie, 2023 Annual Report.

Table 09: Overview and Explanations of Water Consumption and Emission to Water

	2023	2022
Water withdrawal (thousand m ³)	267,838	275,489
Utilized by WACKER	235,660	241,383
Supplied to third parties	32,178	34,106
Cooling water volume (thousand m ³)	243,412	259,578
Utilized by WACKER	213,654	228,084
Supplied to third parties	29,758	31,494
Wastewater volume (thousand m ³)	17,826	17,885
WACKER	12,229	12,655
Third parties	5,597	5,200
COD (chemical oxygen demand) (t)	1,161	1,321
Heavy metals (t)	1.5	1.4
Total nitrogen (t)	174	203
Total phosphorus (t)	7.3	7.0

Source: Wacker Chemie, 2023 Annual Report.

Table 10: 2030 Target: Reduce Specific Water Withdrawal by 15%

	2023	2022
Specific water withdrawal (%)	104.4	102.2
Change in % (vs. 2020)	4.4	2.2

Source: Wacker Chemie, 2023 Annual Report.

3.2.3 ESG Opportunities

The **growth in solar technologies significantly affects the demand for polysilicon**. To align with European regulations, individual countries, such as Germany, are considering the implementation of specific frameworks. Notably, Germany has explored the idea of introducing an industry power price, specifically targeting suppliers of products crucial to the energy transition. Initial suggestions indicated a potential power price of approximately EUR6 cents per kWh. **This proposed measure would particularly benefit Wacker's energy-intensive polysilicon business**, if implemented, it can be a transformative factor for Wacker Chemie.

According to BNP Exane: **“Wacker stands to benefit from the EC’s Net Zero Act and Critical Raw Materials Act through its polysilicon business**. The EU has already announced ambitious plans for growth in solar where polysilicon is a key raw material. We think new legislation at the country level could result in a structural improvement in Wacker’s cost position and a re-rating of the segment’s valuation.”

The **European Commission's Net Zero Industry Act identifies photovoltaic solar energy as a crucial technology for achieving the region's climate goals**. Emphasizing the importance of reshoring the European solar supply chain, there is a notable focus on enhancing the competitiveness of domestic production. Solar module production involves various steps, and **silicon metal is a key raw material upstream in photovoltaic (PV) production**. Silicon metal is utilized to produce polysilicon through a chemical purification process known as the Siemens process, which is energy-intensive due to high temperatures. **The economics of polysilicon production significantly impact solar costs**, with the cost curve historically favoring Chinese producers at the lower end and US/European producers like Wacker Chemie positioned toward the upper end.

On August 16, 2022, President Biden signed the **Inflation Reduction Act**, a comprehensive piece of legislation aimed at reducing carbon emissions and enhancing taxpayer compliance. The act prioritizes **investments in domestic manufacturing, encourages the procurement of critical supplies from domestic or free-trade sources, and supports the R&D and commercialization of technologies such as carbon capture, storage, hydrogen, and clean energy**. Notably, the legislation introduces significant incentives for the chemicals sector, including production tax credits for hydrogen, solar, and battery materials. For instance, polysilicon production qualifies for a **\$3/kg production tax credit and an investment tax credit of up to 30%**. Other solar components, like wafers, PV cells, and modules, also receive production tax credits. These incentives are applicable to projects initiated in or after 2022. These amounted to **USD3/kg for solar grade polysilicon** – tax credits were also announced for downstream solar components (7USd/W for modules and 4USd/W for cells). The US has also taken a more proactive approach in curbing the imports of solar products linked to human rights violations from China (including Polysilicon). **Wacker Chemie currently has c20kt of polysilicon production in the US (and 60kt in Germany) and is the largest producer in the region**. Arguably Wacker has already seen some benefit from this

legislation with customers increasingly valuing high-quality polysilicon with no links to forced labour. US legislation has increased pressure on the EU to provide similar subsidies in order to support the rollout of solar power, while Germany considers implementing an industry power price. (Table 12)

During 2022 results announcements, Wacker's CEO, **Dr. Christian Hartel**, noted that the proposed industry power price range in Germany would **boost the company's competitiveness in Europe**. Despite this, Wacker aims for a result favoring the lower end of the range. The Critical Raw Materials Act recognizes **silicon metals as strategic, impacting production costs, though polysilicon was not explicitly mentioned. Silicon prices are crucial in cost dynamics**. Wacker, with substantial backward integration, still sources a significant portion of its requirements externally. Beyond cost factors, US and European legislation is expected to bring stability to Wacker's pricing, given its unique position with production capabilities outside China and a reputation for high-quality polysilicon.

As specified by BNP Exane **"if solar demand receives a boost from the US IRA and European equivalent, Wacker may be able to move away from more commoditised pricing. Furthermore, with Chinese and international polysilicon benchmarks diverging, Wacker has an opportunity to detach pricing from Chinese spot which now trades at a discount to the 'out of China' price"**.

Table 11: Waste

Waste	2023	2022
Waste by type, in metric tons (t)		
Total	220,163	192,741
Recycled	186,978	160,338
Hazardous	57,770	60,692
Non-hazardous	129,208	99,646
Disposed of	33,185	32,203
Hazardous	11,620	11,612
Non-hazardous	21,565	20,591
Hazardous	69,390	72,304
Non-hazardous	150,773	120,437
Recycled waste in the reporting year, in metric tons (t)*	Onsite	Offsite
Hazardous waste		
Preparation for reuse	-	866
Recycling	-	8,889
Other recovery processes	23,082	24,824
Total	23,082	34,687
Non-hazardous waste		
Preparation for reuse	-	30,416
Recycling	-	24,614
Other recovery processes	4,464	69,713
Total	4,464	124,744
Waste disposed of in the reporting year, in metric tons (t)*		
Hazardous waste		
Incineration (with energy recovery)	1	1,042
Incineration (without energy recovery)	4,515	2,458
Landfill	1,605	1,392
Other waste-treatment processes	26	521
Total	6,207	5,414
Non-hazardous waste		
Incineration (with energy recovery)	0	540
Incineration (without energy recovery)	2,936	258
Landfill	3,861	13,081
Other waste-treatment processes	84	803
Total	6,882	14,682

Source: Wacker Chemie, 2023 Annual Report.

Table 12: USA IRA Initiatives

Main incentives of USA IRA	Description
Solar	Polysilicon production will qualify for a production tax credit of \$3/kg and investment tax credit of up to 30%. Other solar components in the value chain will also receive production tax credits including wafers (\$12/sq metre), PV cells (4 cents per watt-direct current) and modules (7 cents per watt-direct current). Both the production and investment tax credit are offered for projects placed during or after 2022.
Hydrogen (45V)	Clean hydrogen production will be aided with a new tax credit up to \$3/kg, depending on the carbon intensity of the production process. Green hydrogen will command the full credit of \$3/kg but production with higher intensities will also receive down to a minimum of \$0.6/kg (if intensity is between 4-2.5 kg CO2e per kg H). Projects making use of the credit must begin construction by 2033 while eligibility also covers retrofits. However, the credit cannot be used in conjunction with 45Q for carbon capture.
Carbon capture (45Q)	Tax credits for CCS have been in place for over a decade in the US. Initially, the tax credit was pegged at USD20/t of CO2. This was going to rise further to USD50/t for CCS and USD35/t for EOR by 2026 before the IRA was announced. The new proposal looks to increase this credit towards USD85/t for CCS and USD60/t for EOR. The deadline for construction of relevant projects is 2023.
Battery materials	The IRA provides a 10% tax credit for production costs associated with producing both cathodes and anodes as well as critical materials for manufacturing battery materials. Additionally, The IRA provides tax credits for US based battery production equal to \$35 a kilowatt hour for production of battery cells and an additional \$10/kWh for battery modules.

Source: BNP Paribas Exane, Wacker Chemie, 2023 Annual Report, Bloomberg, Capital IQ, Adapted by the Author

Table 13: Environmental Objectives

Economic Activity	Aligned / Total Objective		Opex / Total Opex		Capex / Total Capex	
	aligned per objective	eligible per objective	aligned per objective	eligible per objective	aligned per objective	eligible per objective
CCM (CLIMATE CHANGE MITIGATION)	0.10%	69.90%	0.02%	31.08%	0.02%	47.90%
CCA (CLIMATE CHANGE ADAPTATION)						
WTR (WATER)						
CE (CIRCULAR ECONOMY)						
PPC (POLLUTION PREVENTION AND CONTROL)			1.65%	15.80%		1.50%
BIO (BIOENERGY AND ECOSYSTEMS)						

Source: Wacker Chemie, 2023 Annual Report, adapted by the Author

3.3 TAXONOMY

3.3.1 Introduction to the EU Taxonomy Regulation

The EU requires companies to assess the sustainability of their economic activities based on six environmental objectives, mandatory for this reporting year. Wacker Chemie identified its economic activities under **"climate change mitigation"** and **"pollution prevention and control"**. Therefore, **there is no duplication of eligible sales, CapEx, and OpEx across other environmental objectives**. According to Article 8 (2) of the EU Taxonomy Regulation, Wacker Chemie disclosed the proportion of sales, capital expenditure, and operating expenditure classified as environmentally sustainable. (Table 13)

3.3.2 Taxonomy Criteria's: Alignment and Eligibility

Under the EU Taxonomy Regulation, company activities can be **non-eligible, eligible, or aligned. Non-eligible activities do not meet environmental sustainability criteria, eligible activities meet minimum criteria, and aligned activities significantly contribute to environmental objectives**. To be aligned, a company must show a significant contribution to climate change mitigation, meet Do No Significant Harm (DNSH) criteria for other environmental objectives, and adhere to social standards like human rights, anti-corruption, fair competition, and taxation.

3.3.2.1 Taxonomy Eligibility

The economic activities identified as taxonomy-eligible, defined by the technical assessment criteria, can be describe as the following:

- **"Manufacture of plastics in primary form"** category: **WACKER POLYMERS** (finished products based on polyvinyl acetate); **WACKER SILICONES** (silicone-based products - silicone sealants and pyrogenic silica as insulation material); **WACKER BIOSOLUTIONS** (the sale of PVAc-based gum base for chewing gum);
- **Wastewater treatment** activities to the economic activity "Construction expansion and operation of wastewater collection and treatment systems,"
- **The hydroelectric power plant at Burghausen** to the economic activity "Electricity generation from hydropower"
- **The Burghausen power plant** to the economic activity "Highly efficient combined heat and power with gaseous fossil fuels."

3.3.2.2 Taxonomy Non - Eligibility

Currently, **many upstream products** from Wacker Chemie **are not covered** by the EU Taxonomy Regulation. Therefore, in this reporting period, too, the EU Taxonomy Regulation **does not cover WACKER POLYSILICON**, despite its core

product being hyper-pure polysilicon—a crucial component for highly efficient solar cells and a vital raw material for the energy transition.

3.3.2.3 Taxonomy Alignment

The company activities aligned with Annex I of Commission Delegated Regulation (EU) 2021/2139 and Commission Delegated Regulation (EU) 2022/1214, supplementing Taxonomy Regulation (EU) 2020/852, include the "Manufacture of plastics in primary form" at WACKER POLYMERS and WACKER SILICONES. The company has demonstrated that these activities substantially contribute to climate change mitigation, particularly meeting Criterion c) for products manufactured wholly or partially from renewable feedstock. The corresponding Do No Significant Harm (DNSH) criteria in Appendix C of Annex I were also assessed and met for these taxonomy-aligned activities.

However, for other activities identified as taxonomy-eligible—such as "Electricity generation from hydropower," "Construction, extension and operation of wastewater collection and treatment," and "Highly efficient combined heat and power with gaseous fossil fuels"—alignment with the taxonomy does not yet need to be proven, as the corresponding technical assessment criteria have not yet been met.

3.3.2.4 Limitations to the EU Taxonomy Alignment

The limitations to alignment arise from the following main factors:

- A proportion of taxonomy-eligible products is already based on renewable raw materials. As no fossil-based technology is being replaced, it is impossible to achieve alignment with the taxonomy.
- Renewable raw materials are not available in sufficient quantities and at competitive prices, making it currently impossible to substitute fossil-based raw materials for renewable raw materials.
- Given the large number of different products for a very wide variety of value chains, meeting technical criteria is only possible in stages, and requires more time due to limitations in technology and resources.

3.3.3 Turnover

The taxonomy-aligned proportion of sales to total sales of the Group is 0.10%, while for FY22 was only 0.08%. The proportion of sales from taxonomy-eligible activities is 68.6%, while it was almost 66.4% in FY22. (Table 14)

3.3.4 Opex

At 0.02%, the taxonomy-aligned share in total Opex is substantially lower than the taxonomy-eligible share of 49.5%. In 2022, 0.01% represents the taxonomy-aligned share and the taxonomy-eligible share represented by 53.5%. The majority of taxonomy-eligible operating expenditure comprises servicing and maintenance costs at POLYMERS, SILICONES, and R&D expenditures. (Table 15)

3.3.5 Capex

At 0.02%, the taxonomy-aligned share in total Capex is substantially lower than the taxonomy-eligible share of 46.8%. In 2022, 0.01%, the taxonomy-aligned share in total CapEx was also substantially lower than the taxonomy-eligible share of 32.9%. Taxonomy-eligible: Mostly POLYMERS and SILICONES. A small portion is attributable to energy generation from hydropower, the wastewater treatment plants, and also the combined heat and power plant. (Table 16)

Table 14: Turnover details – taxonomy related

Economic Activity	Turnover	Proportion of turnover
A. Taxonomy-Eligible Activities	mEuro	%
A-1 Environmentally sustainable activities (taxonomy-aligned) Taxonomy-Eligible Activities		
Manufacture of plastics in primary form	6,4	0,10%
Turnover of Environmentally sustainable activities (taxonomy aligned)	6,4	0,10%
A-2 Taxonomy-Eligible but not environmentally sustainable activities (not taxonomy-aligned activities)		
Manufacture of plastics in primary form	4,285,9	66,90%
Manufacture of active pharmaceutical ingredients (API) or active substances	105,4	1,65%
Turnover of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)	4,391,3	68,60%
A. Turnover of Taxonomy-eligible activities (A-1 + A-2)	4,397,7	68,70%
B. Taxonomy-non-eligible activities	mEuro	%
Turnover of taxonomy-non-eligible activities	2,004,5	31,30%
Total (A+B)	6,402,2	100%

Source: Wacker Chemie, 2023 Annual Report, adapted by the Author

Table 15: Opex details – taxonomy related

Economic Activity	Opex	Proportion of Opex
A. Taxonomy-Eligible Activities	mEuro	%
A-1 Environmentally sustainable activities (taxonomy-aligned) Taxonomy-Eligible Activities		
Manufacture of plastics in primary form	0,2	0,02%
Opex of Environmentally sustainable activities (taxonomy aligned)	0,2	0,02%
A-2 Taxonomy-Eligible but not environmentally sustainable activities (not taxonomy-aligned activities)		
Manufacture of plastics in primary form	363,1	47,90%
Manufacture of active pharmaceutical ingredients (API) or active substances	11,6	1,50%
Opex of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)	374,7	49,40%
A. Opex of Taxonomy-eligible activities (A-1 + A-2)	374,8	49,50%
B. Taxonomy-non-eligible activities	mEuro	%
Opex of taxonomy-non-eligible activities	383,0	50,50%
Total (A+B)	757,8	100%

Source: Wacker Chemie, 2023 Annual Report, adapted by the Author

Table 16: Capex details – taxonomy related

Economic Activity	Capex	Proportion of Capex
A. Taxonomy-Eligible Activities	mEuro	%
A-1 Environmentally sustainable activities (taxonomy-aligned) Taxonomy-Eligible Activities		
Manufacture of plastics in primary form	0,1	0,02%
Capex of Environmentally sustainable activities (taxonomy aligned)	0,1	0,02%
A-2 Taxonomy-Eligible but not environmentally sustainable activities (not taxonomy-aligned activities)		
Manufacture of plastics in primary form	275,7	31,00%
Manufacture of active pharmaceutical ingredients (API) or active substances	141,2	15,90%
Capex of taxonomy-eligible but not environmentally sustainable activities (not taxonomy-aligned activities)	416,9	46,80%
A. Capex of Taxonomy-eligible activities (A-1 + A-2)	417,0	46,80%
B. Taxonomy-non-eligible activities	mEuro	%
Capex of taxonomy-non-eligible activities	473,4	53,20%
Total (A+B)	890,4	100%

Source: Wacker Chemie, 2023 Annual Report, adapted by the Author

4. Industry Overview and Competitive Positioning

4.1 INDUSTRY OVERVIEW

4.1.1 Global Economic Outlook

The chemical industry is broad, and involves diverse segments such as Consumer Chemicals, Specialty Chemicals, Petrochemicals, Basic Inorganics, and Polymers. As the fourth-largest manufacturing producer in Europe by turnover, this industry crosses a wide range of products, including general chemical

Figure 49: World chemical sales, 2022 (billions)



Source: Cefic Chemdata International

items, toiletries, paints, agricultural chemicals, synthetic rubber, and more. Industries like automotive and personal care heavily rely on chemical products. In 2022, the global chemicals market achieved total revenues of €4,612 billion, with China leading global sales at €2,390 billion. Europe held a significant position in global chemical exports, totaling 758.9 billion dollars in 2022, with Germany as the leading contributor. (Figures 49 and 50)

4.1.2 Market Overview

Within the complex chemical sector, the Specialty Chemicals subsegment is a significant player within the EU27, representing 25% of total sales in 2022. According to MarketLine, the market is forecasted to accelerate with an anticipated CAGR of 7.6% over 2022-2027. This growth is driven by trends like IoT adoption, sustainability efforts, automation, and growth in markets for pine-derived chemicals and green hydrogen. Cross-industry collaboration is encouraged to accelerate innovation, particularly in the context of sustainability. (Figure 51)

4.1.3 Demand Drivers

Technological advancements and industrial uses are the main drivers of Wacker Chemie demand. The demand for silicones is driven by their wide range of applications in the automotive, construction, electronics, and personal care industries. Because they are lightweight and durable, polymers are widely used in consumer items, automobile parts, and packaging. The semiconductor and solar industries depend on polysilicons, and their expansion is being driven by the growing need for renewable energy sources. The increasing demand for environmentally friendly and sustainable goods in the food, pharmaceutical, and agricultural sectors is driving the adoption of biosolutions. Furthermore, the push for sustainability and favorable legislative trends in green chemistry greatly increase demand in these industries. (2.4 Sector-Specific Conditions)

4.1.4 Supply Drivers

The cost and availability of raw materials, energy prices, technological developments, and regulatory compliance all affect supply for Wacker. The resource of minerals and base chemicals, which are frequently impacted by changes in the world market, is crucial to the production of silicones, polymers, and polysilicons. Given the high energy consumption in chemical production processes, energy costs play a major role, and the dynamics of the entire supply are influenced by Germany's energy regulations. Enhancing supply capacities can be achieved through technological developments in industrial processes and efficiency improvements. Stricter environmental laws and adherence to safety requirements also call for constant investments in greener technologies and sustainable practices. Supply chain management and strategic alliances are essential to guaranteeing an ongoing and reliable supply in this industry. (2.4 Sector-Specific Conditions)

4.2 COMPETITIVE POSITIONING

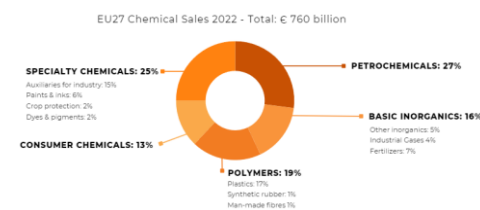
4.2.1 Peers Identification

The peer methodology implemented in this analysis involved a systematic filtering process utilizing data from Bloomberg and Capital IQ to ensure a targeted and rigorous selection of comparable companies. The initial step focused on identifying companies within the chemical sector, narrowing down the scope to ensure relevance to the target company, Wacker.

Subsequently, the selection was refined to exclusively include public traded companies, ensuring transparency and access to comprehensive financial information. Following this, the scope was further narrowed to European companies, focusing on those with operations and financial data within the European market.

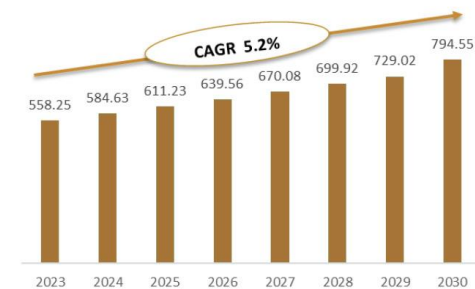
Continuing the refinement process, the analysis specifically considered European companies that are publicly traded on European markets. This step

Figure 50: EU27 Chemical Sales 2022 - Total: € 760 billion



Source: Cefic Chemdata International, Adapted by the Author

Figure 51: The global specialty chemicals market size forecast in Billions



Source: Grand View Research, Adapted by Author

Figure 52: Peers Selection Process



Source: Elaborated by the Author

Figure 53: Peers Comparison: EBITDA Margin, EBIT Margin and ROE



Source: Capital IQ, elaborated by the Author using Python

aimed to enhance the **comparability of financial metrics and operating conditions**.

To ensure the reliability and completeness of the financial data, **companies with missing financial information were excluded** from the final selection. This meticulous data filtering process aimed to maintain the integrity of the comparative analysis and provide a comprehensive view of comparable companies within the chemical sector.

Finally, the **SARD approach (Sum of Absolute Rank Differences) was implemented to identify the top 5 peer companies**. This method ensured a **nuanced and precise selection** of comparable companies, enhancing the reliability and relevance of the subsequent financial analysis. (Figures 52 and 53)

4.2.2 SARD Approach

In the pursuit of identifying **peer companies** for a detailed financial analysis, the chosen methodology was SARD's innovative approach—the **'Sum of Absolute Rank Differences' (SARD)**. Unlike traditional methods, SARD offers the flexibility to consider an **infinite number of variables**, acting as proxies for critical factors such as **profitability, growth, and risk**. This expansive approach heightens the likelihood of discovering **closely aligned peer companies**.

The SARD methodology involves **ranking each company** against others in the sample based on a set of **key variables**, leading to a comprehensive evaluation of their financial fundamentals. Comparable companies were then selected based on achieving the **'least sum rank difference'** across these variables. In simpler terms, the focus was on identifying peers with the **highest similarity in fundamental metrics to Wacker**.

The variables utilized in this selection process included **EV/EBITDA, EV/Revenue, EBITDA/Net Income, Mkt Cap/Equity, Mkt Cap/Revenue, Mkt Cap/Assets, Net Debt/Equity, Net Debt/EV, EBITDA Margin, EBIT Margin, ROE, and Total Debt/Ebit**. These diverse variables ensure a holistic representation of a company's **financial health**, allowing for a nuanced comparison. (Figures 52 and 53)

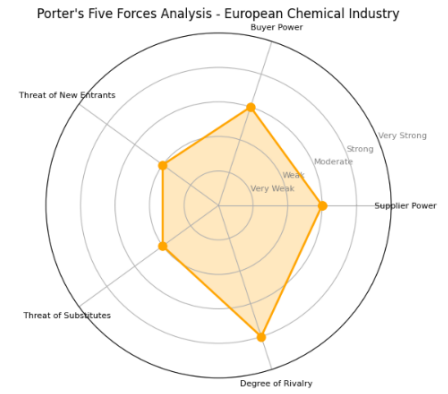
In the **chemical sector**, from the list of eight companies previously disclosed, which included **Evonik Industries AG, Arkema S.A., LANXESS Aktiengesellschaft, Covestro AG, and Clariant AG**, the selected peer companies were those ranking **highest in similarity** to the target company across the specified variables. This meticulous approach in **peer selection** enhances the precision and relevance of financial analysis, providing a more accurate benchmark for evaluating the **performance and valuation of the target company within the chemical sector**.

4.2.3 PORTER FIVE FORCES

The Porter's Five Forces analysis is a **strategic management framework**, that helps assess the **competitive forces within the chemical industry and identify the factors that can affect WCH profitability**. In summary, Wacker Chemie AG faces a **moderate level of supplier power, a low level of buyer power, a weak threat of new entrants and substitutes, and a strong degree of rivalry within the chemical industry**.

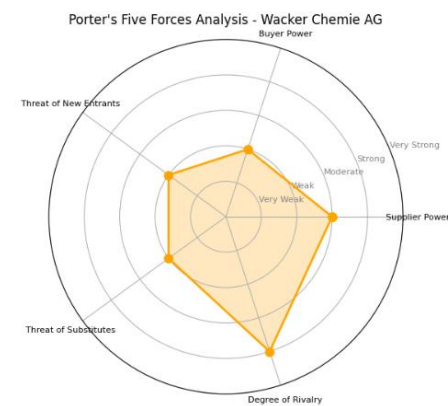
In the context of the European chemical industry using Porter's Five Forces framework, various factors contribute to the industry's competitive dynamics. **Buyer power is moderate**, given the industry's diverse applications, numerous buyers, and commoditized nature of many chemicals, reducing dependence on any single buyer. **Supplier power is also assessed as moderate** due to significant exploration costs of raw materials, an oligopoly structure, and the influence of forward integration. **The threat of new entrants is weak**, attributed to high entry barriers such as capital intensity and the dominance of multinational companies. Although chemicals have few substitutes, the threat is very weak, with a shift towards naturally produced chemicals and minimal emphasis on reducing carbon footprints. Intense rivalry characterizes the industry, driven by high fixed costs, limited market diversity, and increased competition fueled by deregulation and industrialization in Asian markets, especially China. **Overall, the European chemical industry faces strong competitive forces, particularly in terms of rivalry and entry barriers.** (Figures 54 and 55, tables 17 to 21)

Figure 54: Diagram Porter's Five Forces Analysis - European Chemi Industry



Source: Author's Analysis, elaborated using Phyton

Figure 55: Diagram Porter's Five Forces Analysis – Wacker Chemie AG



Source: Author's Analysis, elaborated using Phyton

Table 17: Porter Five Forces - Buyer Power

Porter Five Forces	
Buyer Power	
Industry Overview	Wacker Chemie AG operates in the chemical manufacturing industry, serving various sectors with a diverse portfolio of over 3,200 specialty chemical products.
Wacker's Position	The global presence and leadership of WACKER in the chemical industry give it a strong position. The extensive portfolio caters to diverse industries in more than 100 countries.
Buyer Power Assessment	Wacker's broad range of applications and global market presence reduces the bargaining power of any single buyer. The company's leadership position and commitment to technological advancements further strengthen its position. Therefore, the overall assessment of buyer power is considered low.

Source: Author's Analysis

Table 18: Porter Five Forces – Supplier Power

Porter Five Forces	
Supplier Power	
Industry Overview	The chemical industry relies on raw materials derived from oil and natural gas, with a small number of suppliers operating in an oligopoly structure.
Wacker's Position	WACKER is a global leader with an extensive production network and strategic integration through a Norwegian production facility, reducing dependency on specific suppliers.
Supplier Power Assessment	The oligopoly structure in the industry strengthens supplier power. However, WACKER's global network of silicon suppliers and strategic integration moderates this power. Therefore, the overall assessment of supplier power is considered moderate.

Source: Author's Analysis

Table 19: Porter Five Forces – Threat of New Entrants

Porter Five Forces	
Threat of New Entrants	
Industry Overview	The chemical industry is capital-intensive and expertise-reliant, with high entry barriers and the presence of strong multinational companies.
Wacker's Position	WACKER's global industry leadership, extensive portfolio, and strategic integration create high entry barriers.
Threat of New Entrants Assessment	The capital-intensive and expertise-reliant nature of the industry, combined with the presence of strong multinational companies, makes the threat of new entrants weak.

Source: Author's Analysis

4.2.4 SWOT ANALYSIS

Strengths: Offering more than **3,200 specialty chemicals products** to a wide range of sectors in more than 100 countries, WACKER is a **leader in the industry globally**. The company is a **global leader in hyperpure polysilicon** for the semiconductor and solar industries, and it enjoys **leadership positions in various segments**, including WACKER SILICONES and WACKER POLYMERS. It prioritizes **sustainability with programs to lower greenhouse gas emissions** and energy-efficient products, and it boasts a **strong worldwide production network**. (Figures 56 and 60)

Weaknesses: WACKER is susceptible to **changes in the price of raw materials** and **interruptions in the supply chain**. **Long R&D cycles** and **high costs of ongoing innovation** have an influence on profitability. The company's **earnings and financial stability** are impacted by changes in the world economy. Keeping up with **changing legislation** is expensive and difficult. There is **room for improvement**, as evidenced by WACKER POLYSILICON's **slightly above-average ESG score** and exclusion from the **EU Taxonomy Regulation**. (Figures 57 and 61)

Opportunities: With an emphasis on **semiconductor applications, biotech, and specialty chemicals**, WACKER is growing its capacity. There are a lot of chances due to the **move to electric vehicles** and the **legislative incentives in the USA and Europe**. WACKER is positioned at the forefront of **technical breakthroughs and sustainable practices** with its construction of an **mRNA competence center** and investments in **polysilicon for semiconductor applications**. (Figures 58 to 62)

Threats: It's expensive and difficult to adjust to **changing rules**, particularly in the **sustainability sector**. Potential challenges include the effect of the **Chinese market** and **competitive pressure from other specialized chemical companies**. The issues in the solar market are compounded by **supply chain concerns, political instability, currency volatility, and intense rivalry leading to possible overcapacity**. Because the **chemical industry is cyclical**, WACKER needs to concentrate on **resilient product lines**. (Figures 59 to 63)

5. Investment Summary

5.1 VALUATION SUMMARY

The valuation of Wacker Chemie AG is supported utilizing **discounted cash flow and multiples-based valuation analysis**. The **five-year prediction horizon** takes the **chemical industry's dynamic nature** into account. The revenue forecasts are based on historical data and have been modified for macroeconomic considerations. The 2024 forecast has been updated to account for a **4.51% reduction** due to **high energy and raw material prices alongside declining orders**, and the predictions after 2024 are determined by historical patterns and adjustments for inflation. **Net income growth is positive, operational efficiency are maintained, and gross profit margins are steady**. The **WACC of 7.23%** includes dependable criteria, offering a strong foundation for analysis. With an equity value of **€6.8 billion**, the **DCF valuation** considers both positive operating performance and varying sales trends. Wacker's **EV/EBITDA ratio of 8.85** in the multiples-based valuation indicates a possible undervaluation in comparison to the industry average of 10.05. Additional insights are provided by **sensitivity analysis and Monte Carlo simulations**. **Lower WACC and higher growth rates contribute to elevated equity values, while higher WACC and lower growth rates lead to weakened values**. Monte Carlo simulations highlight the inherent variability and uncertainty in estimating Wacker's stock price, the average and median suggest an **overall positive outlook**, with the average percentage change at 24% and the median at 18.89%.

Table 20: Porter Five Forces – Threat of Substitutes

Porter Five Forces	
Threat of Substitutes	
Industry Overview	Chemicals play a crucial role in various products, resulting in few substitutes, although specific situations may increase the threat.
Wacker's Position	WACKER's diverse portfolio and focus on specialty silicones for high-value applications contribute to reducing the threat of substitutes.
Threat of Substitutes Assessment	The overall threat of substitutes is deemed weak, given WACKER's focus on specialty applications and its position in high-value products.

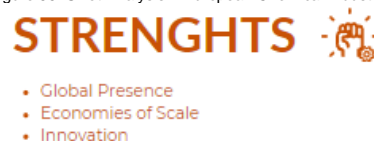
Source: Author's Analysis

Table 21: Porter Five Forces – Degree of Rivalry

Porter Five Forces	
Degree of Rivalry	
Industry Overview	The chemical industry is characterized by high fixed costs, intense competition, and challenges in exiting the market.
Wacker's Position	economies, industrialization in China, and limited diversity in the industry.
Degree of Rivalry Assessment	The overall degree of rivalry is assessed as strong, considering the industry dynamics and WACKER's position.

Source: Author's Analysis

Figure 56: Swot Analysis – European Chemical Industry (1/4)



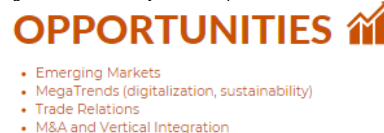
Source: Author's Analysis

Figure 57: Swot Analysis – European Chemical Industry (2/4)



Source: Author's Analysis

Figure 58: Swot Analysis – European Chemical Industry (3/4)



Source: Author's Analysis

Figure 59: Swot Analysis – European Chemical Industry (4/4)



Source: Author's Analysis

Figure 60: Swot Analysis – Wacker Chemie AG (1/4)



Source: Author's Analysis

Figure 61: Swot Analysis – Wacker Chemie AG (2/4)

WEAKNESSES

- Innovation Costs
- Economic Sensitivity
- Regulatory Compliance
- Raw Material Price Volatility

Source: Author's Analysis

Figure 62: Swot Analysis – Wacker Chemie AG (3/4)

OPPORTUNITIES

- Capacity Expansion
- High-Value Products
- Technological Innovation
- Rising Demand for Electric Vehicles
- Legislative Incentives

Source: Author's Analysis

Figure 63: Swot Analysis – Wacker Chemie AG (4/4)

THREAT

- Regulatory Changes
- Competitive Pressure
- Supply Chain Risks
- Currency Exchange Risks
- Increase of Competition in Photovoltaic Market

Source: Author's Analysis

Figure 64: Stock Price Evolution and Target Price



Source: Capital IQ, elaborated by the Author using Python

Table 22: Wacker Chemie Assumptions to Revenue forecast

Wacker Chemie Assumptions	
Gross profit margin Target	78,00%
Capital IQ sales Concesus	6.286
Depreciation & amortization in % of sales	-4,90%
EBITDA Margin 2024	7,00%
Revenue 2024 decline average	-4,51%
Revenue 2026 Polymers Growth Rate Premium	2,00%
Revenue 2026 Polysilicon Growth Rate Premium	5,00%
Revenue 2025 Growth (Inflation)	2,42%
Revenue 2026 Growth (Inflation)	2,21%
Revenue 2027 Growth (Inflation)	1,98%
Revenue 2028 Growth (Inflation)	1,88%

Source: Capital IQ, Bloomberg, Wacker Chemie 2023 Annual Report and Author's Analysis

5.2 INVESTMENT RECOMMENDATION

Based on extensive valuation research, Wacker Chemie AG is recommended to be **BUY, according to FCFF**. The **multiples-based valuation** points to a **STRONG BUY** with a target price of **€167** and a **45.79% upside**, and the FCFF valuation predicts a target price of **€138** with a possible **upside of 20.27%**. The **consensus** target price ranges from **€103 to €175**, supporting a **BUY recommendation**. Wacker has operational risks like supply chain interruptions and increasing ESG concerns, but its **proactive risk mitigation techniques and dedication to sustainability and innovation are in line with its 2030 vision**. By 2030, the company hopes to have sales of over €10 billion and EBITDA margins of 20%. (Figure 64)

Despite the intrinsic risks, Wacker Chemie AG's commitment to innovation, sustainability, and strategic advancements **positions it well** to address challenges and exploit opportunities. **The financials are strong, and the valuation shows that there is space for upside potentials.**

6. Valuation

6.1 FORECASTS OVERVIEW AND HORIZON

In the landscape of the chemical sector, forecasting becomes a critical tool for strategic planning and valuation. Recognizing the **cyclical nature** and **rapid dynamics intrinsic to the industry**, a forecast horizon of **five years** has been chosen for its clarity and manageability. In the field of chemicals, where **technological advances and raw material fluctuations drive swift changes**, a **shorter horizon allows for more precise predictions**. Notably, the chosen timeframe aligns with the sector's cyclical nature, providing a balanced view of the future while **minimizing uncertainties** that tend to escalate with extended forecasting periods.

6.1.1 Revenue Forecast:

Understanding Wacker's revenue forecast necessitates a meticulous examination of **key drivers, industry dynamics, and historical trends**. The **historical revenue** was acquired through **segmentation and regional analysis**; however, the company does not disclose either the **volume of sales** or its **average price**. This information is not available on the company's website, nor is it accessible through renowned financial platforms such as **Bloomberg, Refinitiv, or the investor relations contact lines**, which has remained unanswered up to the present moment. (Table 22, Figure 65 and 66)

To address this challenge, **segmentation** emerges as a crucial tool for clarity and accuracy. Wacker's business areas, including **Silicones, Polymers, BioSolutions, Polysilicon**, others, and consolidated, serve as critical components in dissecting **revenue streams**. By scrutinizing performance at the segment level, a more detailed understanding of the company's **valuation potential** is achieved.

For **2024, revenue projections** for nearly all sales components are based on the **average decline observed over the past 10 years**, reflecting the company's typical downturns. This results in an adjusted decline rate of **4.51%**. The only exception is the **BioSolutions** segment, where projections are calculated using **macroeconomic growth factors**, specifically the **GDP growth rates** for the EU and Euro area provided by **Statista**. This forecast result in sales of **€6.402 billion**. The **consensus** according to Capital IQ for sales in 2024 is **€6.285 billion**

Given the sector's **cyclical nature**, evidenced by a forecasted **capacity utilization** below the long-term average for 2023 by Hadhr and Cefic, historical data on Wacker's prompt recuperation becomes paramount. **Historical patterns** suggest **accelerated revenue growth**, positioning the company for notable increases in the following year after any decline, and suggests an **even faster increase in plus two years of the downturn**. (Figures 65 and 66)

Moving beyond **2024**, the forecast incorporates the dual impact of **inflation** and **historical acceleration trends**. For **2025**, revenue is projected to be the **2024 adjusted figure plus the inflation rate**. **2026** anticipates a historical acceleration, with projections based on the average of growth rate in the periods following a prior

downturn and inflation. For 2027 and 2028, revenues are adjusted by inflation. The revenue forecast reaches a **Compound Annual Growth Rate (CAGR) of 4.74%**.

6.2 INCOME STATEMENT FORECASTS AND MODELLING

Looking at the **income statement forecast**, **gross profit margins** are projected to improve from **16.9% in 2023 to 22% by 2028**, indicating a **stabilization and eventual enhancement in performance**. **Operating expenses**, as a percentage of net revenues, are expected to decrease slightly from **11.4% in 2024 to 10.8% by 2028**, suggesting **potential operational efficiencies**. The **net income** for the period from continuing operations demonstrates **positive growth** during the projection period, rising from **€103.4 million in 2024 to €633.5 million in 2028**, reflecting the **company's strategic initiatives and market positioning**.

Working capital is a key financial metric that reflects a company's **operational liquidity**. The historical trend from **2020 to 2022** indicates a consistent **working capital/net revenue ratio**. During the projection period from **2024 to 2028**, **working capital changes are forecasted to fluctuate, with a significant reduction in 2025 (-€160 million) but stabilizing in subsequent years**. These changes reflect the company's efforts to **optimize inventory management, improve receivables collection, and manage payables efficiently**, allowing the company to sustain a healthy **working capital position**.

Capital Expenditure (CapEx) is crucial for maintaining and expanding a company's **asset base**. The forecasted **CapEx** for the years 2024 to 2028 indicates a strategic approach to **investments**, increasing slightly from **€678 million in 2024 to €750 million in 2028**. This increase reflects the company's commitment to **capacity expansion and long-term growth** in high-margin sectors. Despite high CAPEX, the **Free Cash Flow to the Firm (FCFF)** is projected to improve **substantially, from €16 million in 2024 to €440 million in 2028**, highlighting the company's increasing ability to **generate cash flow** and support its **strategic initiatives**.

The **depreciation and amortization analysis** provides insights into the expected reduction in the value of **fixed assets** over time. The forecasted **depreciation and amortization expenses** increase slightly from **€498.6 million in 2024 to €610.5 million in 2028**, reflecting ongoing **investments in capital assets**. Despite these increases, as a percentage of revenues, they average around **79%**, suggesting a consistent approach to managing **asset lifecycles** that aligns with the company's **historical practices**.

In conclusion, the **income statement forecasting and modeling** showcase the company's commitment to **financial discipline, strategic investments, and operational efficiency**. This comprehensive financial outlook positions the company for **sustainable growth and value creation**, with improvements in **gross profit margins, effective management of operating expenses, and strategic capital expenditures** driving positive **net income** and enhanced **free cash flow**.

6.3 WEIGHTED AVERAGE COST OF CAPITAL

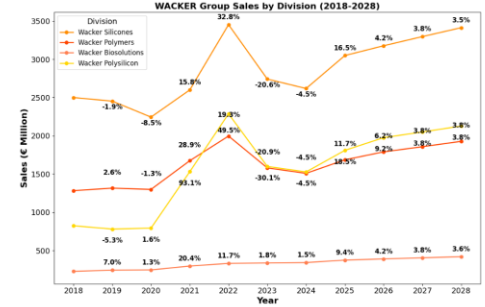
Understanding Wacker Chemie AG's **Weighted Average Cost of Capital (WACC)** involves a detailed examination of various parameters. This meticulous approach to calculating WACC ensures that each parameter is grounded in reliable sources and industry-specific considerations. It provides a robust foundation for evaluating Wacker's cost of capital and informs strategic financial decisions within the prevailing market and economic conditions.

Risk-Free Rate: The risk-free rate, a fundamental component of the WACC, is sourced from the German Basiszinskurve, providing a reliable 10-year government bond rate of **2.0%**.

Country Risk and Market Premium: Damodaran's **Market Premium** for Germany is utilized to incorporate country-specific risk. The country risk is considered negligible, with a market premium of **4.6%**.

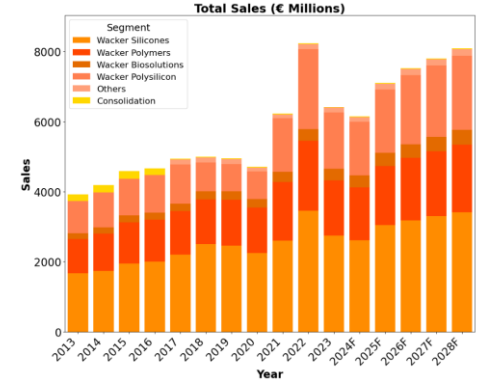
Beta Calculation: Leveraged Beta (β_L) is calculated using the Unleveraged Beta (β_U), capital structure, and corporate tax rate. The calculation yields a **leveraged beta of 1.25**. The unleveraged beta was computed based on covariance, market variance, and correlation among peers, including LANXESS, Evonik Industries, Covestro, Arkema, Clariant, and Wacker. The resulting **unleveraged beta average is 1.08**.

Figure 65: Wacker Group Sales by Division (2018-2028)



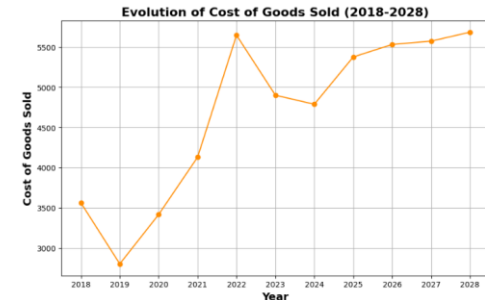
Source: Capital IQ, Bloomberg, Wacker Chemie 2023 Annual Report and Author's Analysis elaborated using Phyton

Figure 66: Revenue Evolution



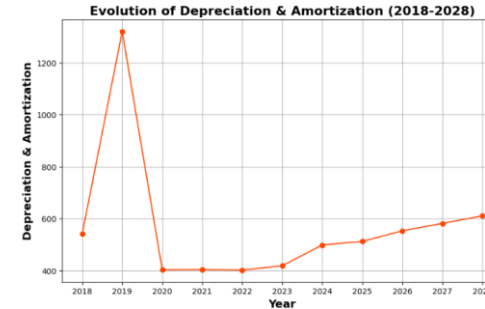
Source: Capital IQ, Bloomberg, Wacker Chemie 2023 Annual Report and Author's Analysis elaborated using Phyton

Figure 67: Evolution of Cost of Goods Sold (2018-2028)



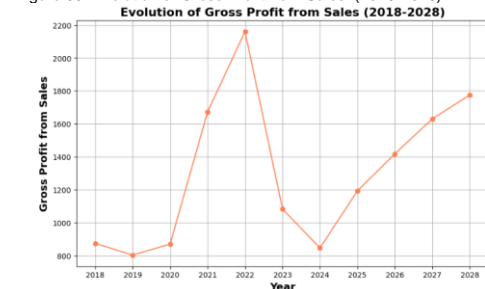
Capital IQ, Bloomberg, Wacker Chemie 2023 Annual Report and Author's Analysis elaborated using Phyton

Figure 68: Evolution of Depreciation & Amortization (2018-2028)



Capital IQ, Bloomberg, Wacker Chemie 2023 Annual Report and Author's Analysis elaborated using Phyton

Figure 69: Evolution of Gross Profit from Sales (2018-2028)



Capital IQ, Bloomberg, Wacker Chemie 2023 Annual Report and Author's Analysis elaborated using Phyton

Debt and Equity Weights: The debt and equity weights are derived from the capital structure of peer companies, including Wacker, resulting in a **debt-to-equity ratio of 17.8%** and an **equity-to-total-capital ratio of 82.2%**.

Corporate Tax Rate: A corporate tax rate of **30.0%**, reflective of the Income Tax and Social Contribution rate in Germany, is applied in the WACC calculation.

Cost of Debt: The pre-tax cost of debt is sourced from Wacker's investor relations website, providing a rate of **7.0%**. Post-tax, this translates to **4.9%**, considering the corporate tax rate.

Cost of Equity: The cost of equity is determined using the Capital Asset Pricing Model (CAPM) with the risk-free rate, market risk premium, and leveraged beta. The resulting cost of equity is **7.7%**.

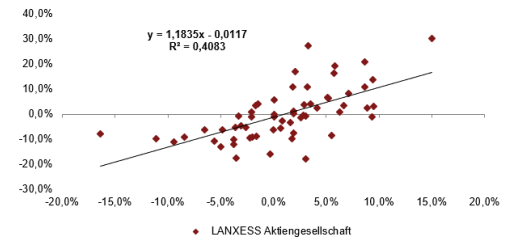
WACC Calculation: The WACC is computed as the weighted sum of the cost of equity and after-tax cost of debt, incorporating the respective weights of debt and equity. The final WACC for Wacker Chemie AG is **7.23%**.

Table 23: WACC Information

WACC		
Parameters		Source
Risk free rate	2.0%	http://www.basiszinstruktur.de/basiszinssatz-gemeinsch-idw.html
Country risk	0.0%	Market Premium: Damodarani
Market premium	4.6%	Damodarani
Unleveraged Beta (Bu)	1.08	Capital IQ (CIQ)
% Debt - [D/(D+E)]	17.8%	CIQ: capital structure
% Equity [E/(D+E)]	82.2%	CIQ: capital structure
Corporate tax	30.0%	Income Tax and Social Contribution rate in Germany.
Leveraged Beta (BL)	1.25	Calculation.
EUR Inflation	1.9%	Statista - Long term inflation
Cost of equity	7.7%	
Cost of debt in EUR (pre-tax)	7.0%	Company information
Cost of debt in EUR (post-tax)	4.9%	Calculation.
WACC	7.23%	

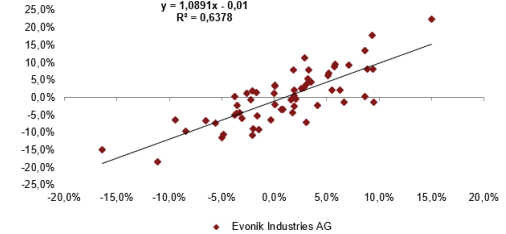
Source: Bloomberg, Capital IQ and Authors Analysis

Figure 70: Beta (β) - LANXESS Aktiengesellschaft



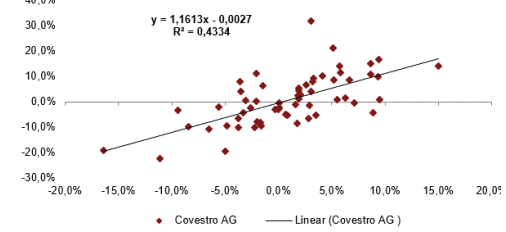
Source: Bloomberg, Capital IQ and Authors Analysis

Figure 71: Beta (β) - Evonik Industries AG



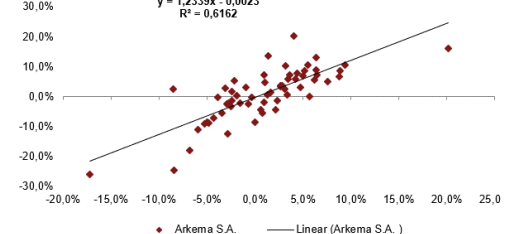
Source: Bloomberg, Capital IQ and Authors Analysis

Figure 72: Beta (β) - Covestro AG



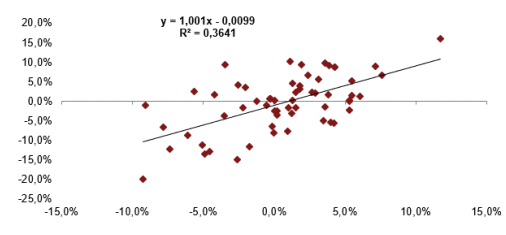
Source: Bloomberg, Capital IQ and Authors Analysis

Figure 73: Beta (β) - Arkema S.A.



Source: Bloomberg, Capital IQ and Authors Analysis

Figure 74: Beta (β) - Clariant AG



Source: Bloomberg, Capital IQ and Authors Analysis

6.4 FREE CASH FLOW TO THE FIRM

The **discounted cash flow (DCF) valuation** for Wacker involves a detailed analysis of **historical and projected financials**. In the historical period from **2020 to 2023**, sales experienced a **fluctuating trend** with a notable **32% growth in 2021**. The **gross profit margin** ranged from a low of **13.8% in 2024** to a high of **27% in 2021**, indicating **variable cost management and market conditions**. The **operating result** was notably higher in **2021 and 2022**, driven by **strong sales growth and effective cost controls**, but it dipped significantly in **2023** due to a **22% drop in sales**. The **net income** for the period also varied, with a peak in **2022** at **€1,281.6 billion** and a significant decline in **2023** to **€327.3 million**, highlighting the impact of **market volatility and operational challenges**.

The **FCFF calculation** involves deducting **corporate taxes, capital expenditures (CAPEX), and changes in working capital from EBITDA**. The resulting FCFF figures, discounted at a **weighted average cost of capital (WACC)**, yield the **discounted cash flows** for each projection year. The **terminal value**, calculated using the **Gordon Growth Model**, is also incorporated. The total **enterprise value** is derived from the sum of the **discounted cash flows** and the **perpetuity value**, the calculation assumes the **long-term inflation in Europe as the long-term growth rate**. The final step involves adjusting for **net debt**, as well as other **assets and liabilities**. Consequently, the estimated **equity value** for Wacker is derived.

In the projection years from **2024 to 2028**, the **FCFF** demonstrates a **positive outlook** for Wacker Chemie AG. Starting with a modest **€16 million in 2024**, **FCFF grows significantly, reaching €440 million by 2028**. This growth is driven by increasing **EBITDA**, from **€646 million in 2024 to €1,515 billion in 2028**, coupled with **controlled capital expenditures and improved working capital management**. Importantly, the **normalization of cash flows in the final period assumes no significant increase in margins**, only an adjustment for **inflation to sales**. The **discounted cash flow analysis**, using a **WACC of 7.23%** and a **perpetuity growth rate of 1.88%**, yields an **enterprise value of €7,036 billion**. After adjusting for **net debt and other assets and liabilities**, the **equity value is estimated at €6,831 billion**. This substantial valuation, compared to the current market capitalization of **€5,678 billion**, indicates significant **upside potential** for investors, reinforcing the **BUY recommendation** for Wacker Chemie AG.

6.5 MULTIPLES BASED VALUATION

Wacker Chemie AG positions itself within a landscape where **EV/EBITDA ratios** serve as an indicator of market sentiment and relative valuation. The company's EV/EBITDA ratio stands at **8.8**, showcasing a favorable valuation position compared to its industry peers. Evonik Industries AG, Arkema S.A., and Clariant AG display **EV/EBITDA ratios** of approximately **6.9, 7.1, and 8.7**, respectively.

LANXESS Aktiengesellschaft, characterized by its unique market positioning, commands a relatively higher **EV/EBITDA ratio of 12.0**, signifying investor confidence and a premium associated with the company's operations. Covestro AG boasts the highest **EV/EBITDA ratio** in the group at **15.6**, it positions itself among the higher end of the spectrum, reflecting favorable market perceptions.

The industry's average **EV/EBITDA ratio** is calculated at **10.05**, providing a benchmark for evaluating Wacker's relative standing. Wacker's ratio of **8.8** suggests

a competitive valuation position within the industry, positioning it favorably for potential investment opportunities.

Wacker's **Return on Equity (ROE) of 25.86%** is significantly higher than most of its peers, suggesting that Wacker is more efficient in generating profits relative to shareholder equity. This high ROE reflects positively on Wacker's profitability and effectiveness in utilizing shareholder funds. However, Wacker's **market capitalization to revenue and assets ratios** indicates potential undervaluation in the market perception of Wacker's revenue-generating capabilities and asset base.

In conclusion, WACKER stands out as a **STRONG BUY** recommendation based on its multiples-based valuation. The company demonstrates **solid operational efficiency with an EBITDA margin and EBITDA/Net Income ratio** near the industry average, coupled with **favorable market cap/revenue and market cap/assets ratios**. Furthermore, WACKER's exceptionally **low net debt/equity and net debt/EV ratios highlight its strong financial health and prudent leverage management**. These factors, combined with its strategic growth initiatives and robust market positioning, make WACKER an attractive investment opportunity with significant potential for sustained value creation. (Table 26 and Figures 76 to 83)

7. Financial Analysis

7.1 EVALUATING WACKER:

In 2023, **Wacker Chemie AG** showcases robust financial performance across various key metrics. The **EV/EBITDA ratio** stands at 8.8, reflecting the company's valuation relative to its earnings before interest, taxes, depreciation, and amortization, signaling a favorable valuation position. Additionally, the **EV/Revenue ratio** is at 0.9, indicating the market's valuation of Wacker's revenue generation capability, with room for potential growth.

Moreover, Wacker demonstrates strong profitability, with an **EBITDA/Net Income ratio** of 2.2, suggesting efficient conversion of EBITDA into net income. The **Market Cap/Equity ratio** of 1.2 indicates investors' confidence in the company's equity, while the **Market Cap/Revenue ratio** of 0.9 suggests a balanced valuation of revenue-generation capacity.

Furthermore, Wacker maintains a healthy financial structure, with a **Market Cap/Assets ratio** of 0.6, indicating a favorable market perception of the company's asset utilization. Additionally, the **Net Debt/Equity ratio** stands at 3.2%, reflecting a conservative approach to debt management, ensuring financial stability. The **Net Debt/EV ratio** at 2.4% signifies the proportion of net debt relative to the company's enterprise value, highlighting a manageable level of financial leverage.

Regarding operational performance, Wacker achieves a robust **EBITDA Margin** of 10.7%, indicating efficient operational profitability. The **EBIT Margin** of 4.8% signifies the company's ability to generate earnings before interest and taxes relative to its revenue. Moreover, Wacker demonstrates strong returns to shareholders, with a **Return on Equity (ROE)** of 25.9%, indicating efficient utilization of equity capital to generate profits.

Lastly, Wacker maintains a prudent approach to debt management, with a **Total Debt/EBIT ratio** of 20.4%, indicating the company's capacity to repay its debts from its operational earnings. Overall, Wacker's solid financial performance across these metrics underscores its resilience and potential for sustained growth in the future.

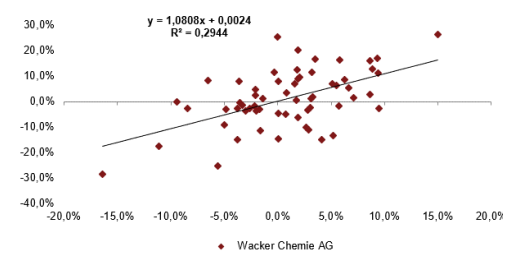
7.2 EVALUATING WACKER AMONG ITS PEERS:

Evaluating WACKER among its **peers** and the **industry average** across various financial metrics provides a comprehensive view of its **market position and operational efficiency**.

EV/Revenue: WACKER has an EV/Revenue ratio of 0.95, which is slightly above the industry average of 0.92. **This indicates that WACKER is valued similarly to its peers in terms of revenue generation, though it is priced more favorably** compared to Evonik Industries AG (0.81) and LANXESS Aktiengesellschaft (0.75), but less favorably compared to Clariant AG (1.18).

EBITDA/Net Income: With an EBITDA/Net Income ratio of 2.19, WACKER sits near the industry average of 1.97. **This ratio highlights how efficiently a company converts its EBITDA to net income.** Compared to Arkema S.A. (3.19)

Figure 75: Beta (β) – Wacker Chemie AG



Source: Bloomberg, Capital IQ and Authors Analysis

Table 24: FCFF Information

WACC	7.23%
Growth	1.88%
Discounted cash flow	704
Perpetuity	6.332
Enterprise value	7.036
Net debt	(204)
Other assets and liabilities	
Adjusted value	(204)
Equity Value	6.831
Market cap	5.678

Source: Bloomberg, Capital IQ and Authors Analysis

Table 25: Key Financial Ratios

Key financial Ratios	2022	2023	2024F
Gross margin	26.3%	16.9%	13.8%
EBITDA margin	25.3%	12.9%	10.5%
Net profit margin	15.6%	5.1%	5.1%
ROE	25.9%	25.9%	6.4%
ROA	13.6%	3.7%	3.5%
Asset turnover	1.93	1.50	0.90
Current Ratio	2.42	2.21	2.17
Debt/equity	0.18	0.32	0.35

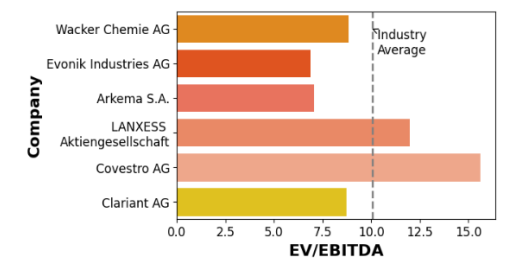
Source: Capital IQ, elaborated by the Author using Python

Table 26: Key Figures Peer Comparison

	WCH 2022	WCH 2023	Evonik Industries AG	Arkema S.A.	LANXESS Aktiengesellschaft	Covestro AG	Clariant AG	Industry Average
EV/EBITDA	3.26	8.85	6.87	7.06	11.98	15.61	8.74	10.05
EV/Revenue	0.72	0.95	0.81	0.99	0.75	0.88	1.18	0.92
EBITDA/Net Income	0.22	2.19	2.30	3.19	0.95	1.50	1.90	1.97
EBITDA margin	25.3%	10.72%	11.75%	14.03%	6.26%	5.61%	13.53%	10.23%
Mkt Cap/Equity	1.18	1.24	0.96	1.03	0.54	1.50	1.87	1.18
Mkt Cap/Revenue	4.74	0.89	0.56	0.81	0.36	0.89	0.93	0.67
Mkt Cap/Assets	0.63	0.64	0.43	0.53	0.25	0.73	0.76	0.54
ROE	31.5%	25.86%	4.70%	13.60%	4.60%	-4.20%	14.26%	6.59%

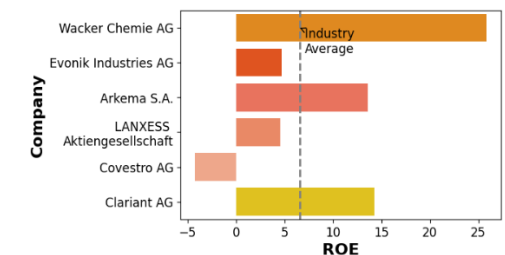
Source: Capital IQ, elaborated by the Author using Python

Figure 76: EV/EBITDA Peer Comparison



Source: Capital IQ, elaborated by the Author using Python

Figure 77: ROE Peer Comparison



Source: Capital IQ, elaborated by the Author using Python

and Evonik Industries AG (2.30), **WACKER's performance is relatively efficient**, although LANXESS Aktiengesellschaft (0.95) and Covestro AG (1.50) show lower ratios.

EBITDA Margin: WACKER's EBITDA margin of 10.72% is slightly above the industry average of 10.23%. **This margin indicates the company's profitability at the operating level before non-cash expenses.** WACKER performs well compared to LANXESS Aktiengesellschaft (6.26%) and Covestro AG (5.61%) but falls short of Arkema S.A. (14.03%) and Clariant AG (13.53%).

Market Cap/Equity: WACKER's market cap/equity ratio is 1.24, higher than the industry average of 1.18. **This suggests that WACKER is perceived to have a relatively higher market value compared to its equity base than some of its peers**, like Evonik Industries AG (0.96) and LANXESS Aktiengesellschaft (0.54), but is lower compared to Covestro AG (1.50) and Clariant AG (1.87).

Market Cap/Revenue: At 0.89, WACKER's market cap/revenue ratio is above the industry average of 0.67. **This indicates a higher valuation relative to its revenue compared to peers** like Evonik Industries AG (0.56) and LANXESS Aktiengesellschaft (0.36), but slightly below Clariant AG (0.93).

Market Cap/Assets: WACKER's market cap/assets ratio is 0.64, which is higher than the industry average of 0.54. **This suggests a better market valuation relative to its asset base compared to some peers**, such as Evonik Industries AG (0.43) and LANXESS Aktiengesellschaft (0.25), but lower than Covestro AG (0.73) and Clariant AG (0.76).

Net Debt/Equity: WACKER stands out with a net debt/equity ratio of 3.15%, significantly lower than the industry average of 39.59%. **This indicates that WACKER has a very low level of debt relative to its equity, showcasing strong financial health compared to peers** like LANXESS Aktiengesellschaft (55.78%) and Covestro AG (41.81%).

Net Debt/EV: WACKER's net debt/EV ratio of 2.38% is also considerably below the industry average of 23.27%, **reaffirming its low leverage and strong balance sheet compared to peers** such as LANXESS Aktiengesellschaft (30.00%) and Evonik Industries AG (26.10%).

Total Debt/EBIT: WACKER's total debt/EBIT ratio is 20.38%, which is above the industry average of 12.54%, suggesting it **has a higher debt burden relative to its earnings before interest and taxes.** This contrasts with peers like LANXESS Aktiengesellschaft, which has a negative ratio due to losses, and Covestro AG (3.95%).

In summary, WACKER exhibits **strong operational efficiency and profitability**, with an **EBITDA margin and EBITDA/Net Income ratio near the industry average.** It maintains a **favorable valuation relative to revenue and assets, suggesting confidence in its market performance.** Importantly, WACKER's **low debt ratios** highlight its **strong financial health**, positioning it well against its peers in terms of **leverage and balance sheet strength.**

8. Investment Risks

8.1 RISK IDENTIFICATION AND ASSESSMENT

For Wacker Chemie AG, risks within the chemical industry are categorized into four key areas: Strategic & ESG, Business Risks, Financial Risks, and Operational Risks.

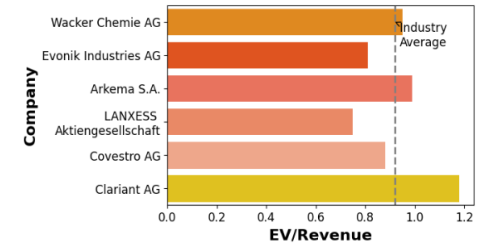
Strategic & ESG Risks (Table 27):

1. **Strategic Risks:** Wacker faces strategic risks related to its global presence, including social and political crises, market volatility, and technological disruptions. The likelihood of these risks is moderate, resulting in a **moderate risk rating.**

2. **ESG Risks:** The shift towards Environmental, Social, and Governance (ESG) considerations introduces risks such as climate change impact, societal relations, and governance practices. The probability of ESG risks is high, with potential severe impacts, resulting in a **high-risk rating.**

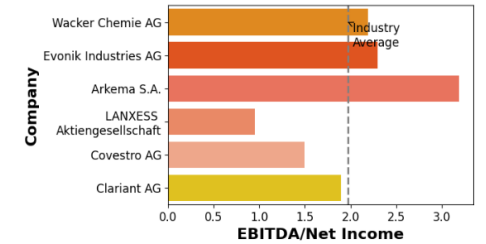
Business Risks (Table 29):

Figure 78: EV/REVENUE Peer Comparison



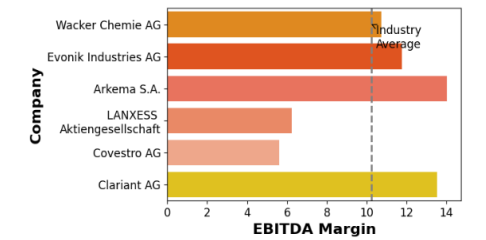
Source: Capital IQ, elaborated by the Author using Python

Figure 79: EBITDA/NET INCOME Peer Comparison



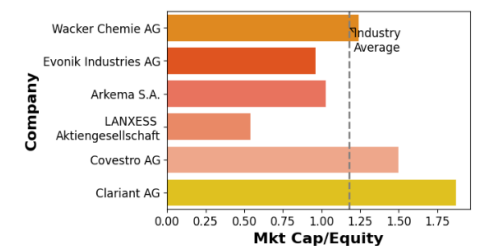
Source: Capital IQ, elaborated by the Author using Python

Figure 80: EBITDA MARGIN Peer Comparison



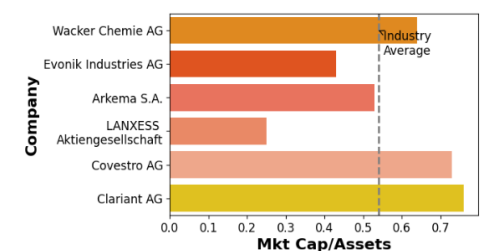
Source: Capital IQ, elaborated by the Author using Python

Figure 81: MKT CAP/EQUITY Peer Comparison



Source: Capital IQ, elaborated by the Author using Python

Figure 82: MKT CAP/ASSET Peer Comparison



Source: Capital IQ, elaborated by the Author using Python

1. **Market Risks:** Wacker's core business encounters risks within the chemical market, influenced by volatile product prices, global market conditions, and intense competition. The likelihood of market risks is high, resulting in a **severe risk rating**.

2. **Macroeconomic Volatility:** Economic downturns affecting consumer spending and industrial production pose moderate risks, resulting in a moderate risk rating.

3. **Regulatory and Legal Risks:** Compliance with evolving regulations and legal standards presents low probability risks, but with moderate impacts, resulting in a moderate risk rating.

Financial Risks (Table 30):

1. **Interest Rate Risks:** Fluctuating interest rates impact debt management, posing moderate risks, resulting in a moderate risk rating.

2. **Exchange Rate Risks:** Currency exchange rate fluctuations affect product/service costs and net asset values. The likelihood is moderate, but the impact is high, resulting in a severe risk rating.

3. **Inflation Risks:** Inflation impacts production costs and profit margins, posing moderate risks, resulting in a moderate risk rating.

4. **Counterparty and Credit Risks:** Unexpected changes in customer compliance and credit pose high risks, impacting cash flow and financial stability, resulting in a severe risk rating.

Operational Risks (Table 28):

1. **Physical Asset Risks:** Machinery breakdowns and human resource challenges due to an aging workforce present moderate risk, resulting in a moderate risk rating.

2. **Supply Chain Risks:** Economic and geopolitical events exacerbate supply chain risks, impacting costs and production. The likelihood is high, with significant impacts, resulting in a severe risk rating.

3. **Chemical Risks:** Although the likelihood of chemical risks is very low, the potential impact of liabilities for environmental damage is very high, resulting in a severe risk rating.

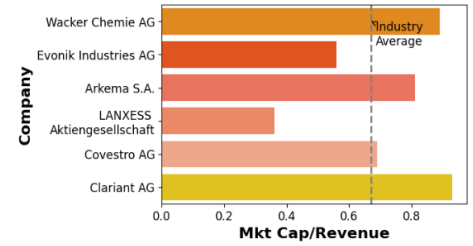
Wacker Chemie AG, while navigating similar risks prevalent in the chemical industry, distinguishes itself through proactive measures and strategic initiatives. Leveraging its strengths as a global industry leader and a comprehensive portfolio of over 3,200 specialty chemical products, Wacker demonstrates resilience in the face of strategic and ESG risks. **The company's commitment to innovation and sustainability**, as evidenced by its investment in reducing greenhouse gas emissions and advancements in eco-friendly technologies, positions it ahead of peers. **Wacker's strategic moves showcase a forward-thinking approach**, fostering adaptability, regulatory compliance, and competitive advantage. By embracing these initiatives, **Wacker Chemie AG is looking for positive outcomes, setting itself on a trajectory of sustainable growth and industry leadership.** (Figure 84)

Despite the risks, **Wacker's proactive risk mitigation strategies and continuous monitoring are crucial for navigating these challenges.** Investors should carefully weigh these factors in their decision-making process, considering their risk tolerance and long-term investment goals.

8.3 SCENARIOS

In this scenario analysis for WCH, there are three possible outcomes: **best case, base case, and worst case**, each varying by 5% from the base scenario in terms of revenue and WACC. In the **best-case scenario**, 2024 revenue is projected at €6,440 million with a WACC of 6.73%, resulting in a price of €154 per share, reflecting an upside of 34.37%, leading to a **strong buy recommendation**. The **base case** projects revenue at €6,133 million and a WACC of 7.23%, with the share price at €138, yielding an upside of 20.31%, suggesting a **buy recommendation**. In the **worst-case scenario**, revenue drops to €5,827 million with a WACC of 7.73%, bringing the share price down to €124, indicating a modest upside of 8.66%, thus a **hold/neutral recommendation**. This highlights the company's sensitivity to revenue

Figure 83: MKT CAP/REVENUE Peer Comparison



Source: Capital IQ, elaborated by the Author using Phyton

Table 27: Strategic and ESG risks

Strategic & ESG	Probability	Impact	Risk Rating
Strategic Risks	Medium	Medium	Moderate
ESG Risks	High	Medium	Severe

Source: Bloomberg, Capital IQ and Authors Analysis

Table 28: Operational Risks

Operational Risks	Probability	Impact	Risk Rating
Physical Asset Risks	Medium	Medium	Moderate
Supply Chain Risks	High	Medium	Severe
Chemical Risks	Very Low	Very High	Severe

Source: Bloomberg, Capital IQ and Authors Analysis

Table 29: Business Risks

Business Risks	Probability	Impact	Risk Rating
Market Risks	High	Medium	Severe
Macroeconomic Volatility	Medium	Medium	Moderate
Regulatory & Legal Risks	Low	Medium	Moderate

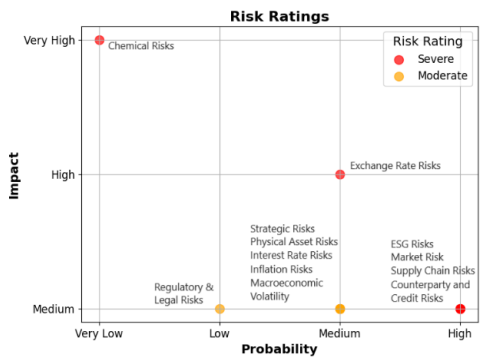
Source: Bloomberg, Capital IQ and Authors Analysis

Table 30: Financial Risks

Financial Risks	Probability	Impact	Risk Rating
Interest Rate Risks	Medium	Medium	Moderate
Exchange Rate Risks	Medium	High	Severe
Inflation Risks	Medium	Medium	Moderate
Counterparty and Credit Risks	High	Medium	Severe

Source: Bloomberg, Capital IQ and Authors Analysis

Figure 84: Risk Assessment Summary



Source: Bloomberg, Capital IQ, and Authors Analysis using Phyton

Figure 31: Scenarios Analysis

Scenarios	Best case	Base case	Worst case
2024 Revenue	6440	6133	5827
WACC	6,73%	7,23%	7,73%
Price	154	138	124
Upside/Downside	34,37%	20,31%	8,66%
Recommendation	Strong buy	Buy	Hold /Neutral

Source: Authors Analysis

and capital cost changes, demonstrating the potential for significant upside in favorable conditions and the need for caution in less favorable ones.

8.3.1 Sensitivity Analysis:

The sensitivity analysis conducted on Wacker Chemie AG's stock value provides a broad understanding of how variations in the WACC and growth rates impact the company's valuation. The table stages **stock values under different combinations of WACC and growth rates**, offering insights into potential scenarios. The results reveal an evident trend: **lower WACC and higher growth rates contribute to elevated stock prices, while higher WACC and lower growth rates lead to weakened values.**

8.3.2 Monte Carlo Simulations:

The results from the Monte Carlo simulation provide a statistical summary of the potential future outcomes for the stock price over the specified time horizon. **On average, the stock price is expected to increase by 24%. The median percentage change is 18.89%.** This means that 50% of the simulated stock prices have a percentage change less than 18.89%, and 50% have a change greater than 18.89%. The median is less affected by extreme values than the average. **25th Percentile:** This means that 25% of the simulated stock prices have a percentage change less than -2.91%. It is a somewhat pessimistic scenario. **50th Percentile:** This is the same as the median, indicating the middle value of the distribution. **75th Percentile:** This indicates that 75% of the simulated stock prices have a percentage change less than 45.11%. It represents an optimistic scenario. **95th Percentile:** This indicates that 95% of the simulated stock prices have a percentage change less than 93.94%. It represents a very optimistic scenario.

A standard deviation of 37.76 suggests **significant volatility** in the stock price changes. A skewness of 0.93 indicates that the distribution has a **longer tail on the right side (positive skew), meaning there are more extreme positive changes than negative ones.** A kurtosis of 1.46 indicates that the distribution has **fatter tails than a normal distribution, suggesting a higher probability of extreme values.** Buy Percentage: **54.38% of the simulations resulted in a stock price increase of more than 15%. This suggests that in over half of the scenarios, the stock price performed well enough to be classified as a "Buy.** Hold Percentage: **11.66% of the simulations resulted in a stock price increase between 5% and 15%. These scenarios indicate moderate performance, classified as "Hold."** Sell Percentage: **33.96% of the simulations resulted in a stock price increase of less than 5% or a decrease. This suggests that in about one-third of the scenarios, the stock did not perform well enough and is classified as "Sell."**

In conclusion, the average and median suggest an **overall positive outlook** for WCH, with the average percentage change at 24% and the median at 18.89%. The high standard deviation (37.76) indicates **significant volatility**, implying that while the **average outlook is positive**, there is **considerable risk involved.** The positive skewness (0.93) suggests that **there are more extreme positive outcomes than negative ones.** The kurtosis (1.46) indicates a higher likelihood of extreme changes compared to a normal distribution. **More than half of the scenarios are classified as "Buy," suggesting a strong potential for positive returns.**

Figure 85: Sensitivity Analysis

		Growth				
		0.88%	1.38%	1.88%	2.38%	2.88%
WACC	6.23%	142	156	173	195	224
	6.73%	128	140	154	171	192
	7.23%	116	126	138	151	168
	7.73%	107	115	124	136	149
	8.23%	98	105	113	122	134
Recommendation System	Sell	Reduce	Hold/Neutral	Buy	Strong Buy	
	-5% ≤	> -5% & 5% ≤	> 5% & 15% ≤	> 15% & ≤ 30%	> 30%	

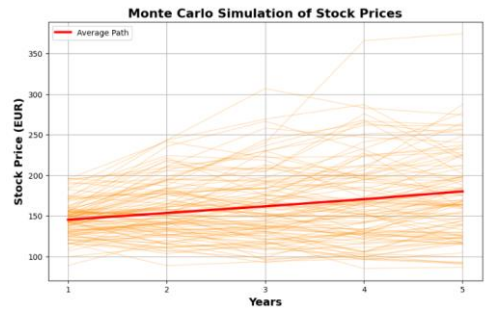
Source: Authors Analysis

Table 32: Monte Carlo Simulation Summary Statistics

Monte Carlo Simulation			
Number of Trials	10,000	95th Percentile	93.94
Average	24.00	Standard Deviation	37.76
Median	18.89	Skewness	0.93
5th Percentile	-27.56	Kurtosis	1.46
25th Percentile	-2.91	Buy Percentage	54.38
50th Percentile	18.89	Hold Percentage	11.66
75th Percentile	45.11	Sell Percentage	33.96

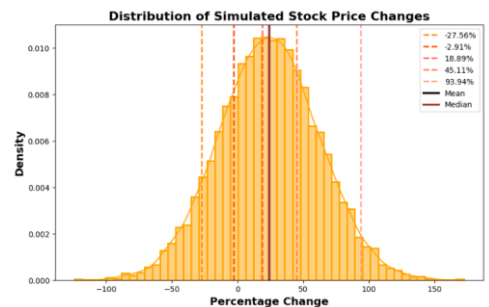
Source: Author's Analysis elaborated using Python

Figure 86: Monte Carlo Simulation of Stock Price



Source: Author's Analysis elaborated using Python

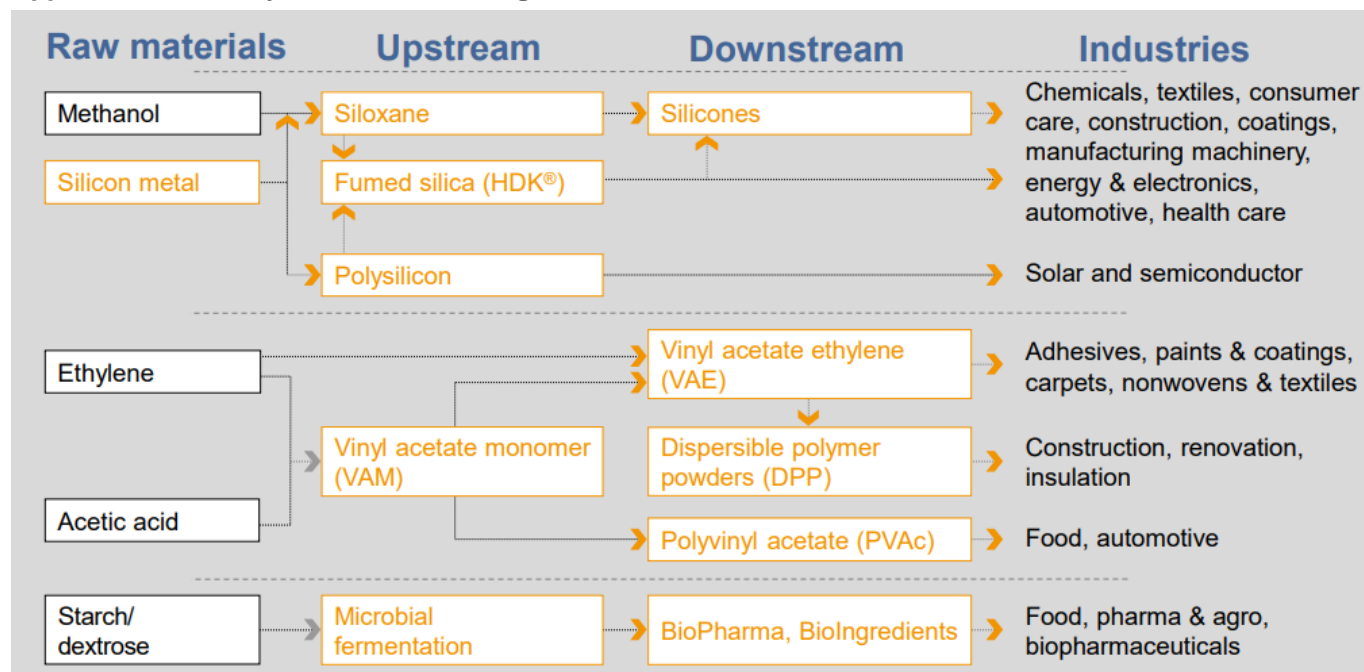
Figure 87: Distribution of Simulated Stock Price Changes



Source: Author's Analysis elaborated using Python

Appendix

Appendix 1: Five Key Raw Materials Diagrams



Source: Wacker Chemie 2023 FactBook

Appendix 2: Balance Sheet

Wacker Chemie

Base-date: 31/12/2022

In EUR million

Year	<<< Historical		Projection >>>				
	2022	2023	2024	2025	2026	2027	2028
Property, plant and equipment & investment property	2.719,4	3.039,9	3.523,8	4.009,1	4.494,5	4.979,9	5.465,2
Intangible assets	213,0	293,5	293,5	293,5	293,5	293,5	293,5
Other assets	1.809,0	1.619,3	1.619,3	1.619,3	1.619,3	1.619,3	1.619,3
Non-current assets	4.741,4	4.952,7	5.436,6	5.921,9	6.407,3	6.892,7	7.378,0
Inventories	1.655,8	1.449,2	1.449,2	1.232,0	1.422,4	1.507,0	1.563,8
Trade receivables	916,2	788,6	788,6	767,0	885,6	938,2	973,6
Other financial assets	54,2	78,8	78,8	78,8	78,8	78,8	78,8
Other receivables and other assets	262,0	218,6	218,6	166,7	187,2	192,6	194,0
Cash and cash equivalents	1.771,8	1.366,5	1.469,9	1.573,3	1.894,5	2.306,7	2.852,3
Current assets	4.660,0	3.901,7	4.005,1	3.817,9	4.468,5	5.023,3	5.662,5
Total assets	9.401,4	8.854,4	9.441,7	9.739,8	10.875,8	11.915,9	13.040,5
Equities & Liabilities							
Subscribed capital of Wacker Chemie AG	260,8	260,8	260,8	260,8	260,8	260,8	260,8
Retained earnings incl. other equity items	4.769,9	4.319,1	4.873,3	4.976,7	5.297,9	5.710,1	6.255,7
Equity	5.030,7	4.579,9	5.134,1	5.237,5	5.558,7	5.970,9	6.516,5
Deferred tax liabilities	35,6	26,3	26,3	26,3	26,3	26,3	26,3
Financial liabilities	1.110,5	1.108,1	1.108,1	1.108,1	1.108,1	1.108,1	1.108,1
Other liabilities (incl. contract liabilities)	1.297,3	1.377,1	1.328,9	1.676,4	2.352,8	2.932,8	3.488,7
Non-current liabilities	2.443,4	2.511,5	2.463,3	2.810,8	3.487,2	4.067,2	4.623,1
Financial liabilities	461,4	417,5	677,7	702,4	719,4	735,3	749,9
Trade payables	885,6	878,9	878,9	670,8	753,1	774,8	780,6
Other liabilities (incl. contract liabilities)	580,3	466,6	287,7	318,4	357,4	367,7	370,5
Current liabilities	1.927,3	1.763,0	1.844,3	1.691,5	1.829,9	1.877,8	1.900,9
Liabilities	4.370,7	4.274,5	4.307,6	4.502,3	5.317,1	5.945,0	6.524,0
Total equity and liabilities	9.401,4	8.854,4	9.441,7	9.739,8	10.875,8	11.915,9	13.040,5
	check	-	-	-	-	-	-

Appendix 3: Income Statement

Wacker Chemie

Base-date: 31/12/2023

In EUR million

Year	<<< Historical				Projection >>>				
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Months	12	12	12	12	12	12	12	12	12
Days	360	360	360	360	360	360	360	360	360
Sales	4.692,2	6.207,5	8.209,3	6.402,2	6.133,4	7.081,2	7.502,1	7.784,9	8.069,9
(%) growth	-5%	32%	32%	-22%	-4%	15%	6%	4%	4%
Cost of goods sold	-3.418,8	-4.130,8	-5.646,4	-4.900,5	-4.788,4	-5.375,8	-5.531,0	-5.572,4	-5.684,0
Depreciation & amortization	-403,5	-404,2	-402,1	-418,7	-498,6	-512,3	-553,2	-581,6	-610,5
	-3.822,3	-4.535,0	-6.048,5	-5.319,2	-5.287,0	-5.888,0	-6.084,2	-6.154,0	-6.294,5
% revenues	-81,5%	-73,1%	-73,7%	-83,1%	-86,2%	-83,2%	-81,1%	-79,1%	-78,0%
Gross profit from sales	869,9	1.672,5	2.160,8	1.083,0	846,4	1.193,2	1.417,9	1.630,9	1.775,4
Gross Margin	19%	27%	26%	16,9%	13,8%	16,9%	18,9%	21,0%	22,0%
Selling expenses	-290,6	-297,6	-342,5	-337,5	-323,3	-347,3	-386,3	-397,7	-407,9
Research and development expenses	-156,6	-164,2	-178,4	-184,1	-176,4	-187,0	-209,9	-215,8	-220,9
General administrative expenses	-139,5	-158,8	-183,2	-177,5	-170,0	-183,6	-203,5	-209,6	-215,1
Other operating income	85,5	88,6	176,6	127,0	121,7	144,4	150,2	156,4	162,8
Other operating expenses	-142,9	-68,7	-156,2	-157,2	-150,6	-160,8	-179,6	-184,8	-189,3
Expenses	-644,1	-600,7	-683,7	-729,3	-698,7	-734,4	-829,1	-851,5	-870,4
(%) on net revenues	-13,7%	-9,7%	-8,3%	-11,4%	-11,4%	-10,4%	-11,1%	-10,9%	-10,8%
Operating result	225,8	1.071,8	1.477,1	353,7	147,7	458,8	588,8	779,5	904,9
Result from investments in joint ventures and associates	34,9	62,4	200,9	49,3					
Other investment income	2,1	0,1	0,8	1,9					
EBIT	262,8	1.134,3	1.678,8	404,9	147,7	458,8	588,8	779,5	904,9
Interest result	-13,9	-16,3	-18,5	7,8					
Other financial result	-31,0	-24,4	-44,1	-25,7					
Income before taxes	217,9	1.093,6	1.616,2	387,0	147,7	458,8	588,8	779,5	904,9
Income taxes	-15,6	-265,8	-334,6	-59,7	-44,3	-137,7	-176,7	-233,8	-271,5
Net income for the period from continuing operations	202,3	827,8	1.281,6	327,3	103,4	321,2	412,2	545,6	633,5
Effective Tax Rate	-7,2%	-24,3%	-20,7%	-15,4%	-30,0%	-30,0%	-30,0%	-30,0%	-30,0%
EBIT	262,8	1.134,3	1.678,8	404,9	147,7	458,8	588,8	779,5	904,9
Depreciation & amortization	403,5	404,2	402,1	418,7	498,6	512,3	553,2	581,6	610,5
EBITDA	666,3	1.538,5	2.080,9	823,6	646,3	971,1	1.142,0	1.361,0	1.515,5
EBITDA Margin %	14%	25%	25%	12,9%	10,5%	13,7%	15,2%	17,5%	18,8%

Appendix 4: Free Cash Flow to the firm

>>> FCF and Value

EBITDA	646	971	1.142	1.361	1.515
Corporate Taxes	-44	-138	-177	-234	-271
CAPEX	-678	-702	-719	-735	-750
Δ Working capital	92	-160	-90	-55	-54
FCFF	16	(28)	156	337	440

Projection months	12	12	12	12	12
Discount factor	0,93	0,87	0,81	0,76	0,76
Discounted cash flow	15	(25)	126	255	333

WACC	7,23%
Growth	1,88%
Discounted cash flow	704
Perpetuity	6.332
Enterprise value	7.036
Net debt	(204)
Other assets and liabilities	
Adjusted value	(204)
Equity Value	6.831
Market cap	5.678

Appendix 5: WACC

Wacker Chemie

Base-date: 31/12/2023

In EUR million

>>> WACC

Parameters	Source
Risk free rate	2,0% http://www.basiszinskurve.de/basiszinssatz-gemaess-idw.html
Country risk	0,0% Market Premium: Damodaran .
Market premium	4,6% Damodaran
4 Unleveraged Beta (Bu)	1,08 Capital IQ (CIQ)
% Debt - [D/(D+E)]	17,8% CIQ: capital structure
% Equity [E/(D+E)]	82,2% CIQ: capital structure
Corporate tax	30,0% Income Tax and Social Contribution rate in Germany.
Leveraged Beta (βL)	1,25 Calculation.
EUR Inflation	1,9% Statista - Long term inflation
Cost of equity	7,7%
Cost of debt in EUR (pre-tax)	7,0% Company information
Cost of debt in EUR (post-tax)	4,9% Calculation.
WACC	7,23%

Appendix 6: Beta

Base - date:

31/12/2023

Companies	Points	Covariance	Market Variance	Beta	Correlation R2	Beta Adj
LANXESS Aktiengesellschaft	60	0,004	0,003	1,184	0,639	41% 1,122
Evonik Industries AG	60	0,003	0,003	1,089	0,799	64% 1,059
Covestro AG	60	0,004	0,003	1,161	0,658	43% 1,108
Arkema S.A.	60	0,004	0,003	1,234	0,785	62% 1,156
Clariant AG	60	0,002	0,002	1,001	0,603	36% 1,001
Wacker Chemie AG	60	0,003	0,003	1,081	0,543	29% 1,054

Appendix 7: D/E

Evolution	LANXESS Aktiengesellschaft	Evonik Industries AG	Covestro AG	Arkema S.A.	Clariant AG	Wacker Chemie AG	(D/EV) 5Y
	27,7%	22,1%	4,5%	14,9%	17,6%	13,3%	16,7%
	25,3%	14,4%	11,5%	18,4%	15,6%	17,3%	17,1%
	16,1%	18,7%	6,8%	14,4%	13,9%	1,1%	11,8%
	32,6%	17,6%	14,8%	4,9%	19,1%	0,0%	14,8%
	54,1%	26,9%	25,7%	20,9%	13,0%	0,0%	23,4%
	50,6%	27,0%	21,7%	22,0%	15,1%	2,4%	23,1%

Appendix 8: Working capital

Working Capital									
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028
N° of days	360	360	360	361	361	361	361	361	361
Sales	4.692	6.208	8.209	6.402	6.133	7.081	7.502	7.785	8.070
COGS	4.063	4.732	6.330	5.630	4.788	5.376	5.531	5.572	5.684
Tax	(16)	(266)	(335)	(60)	(44)	(138)	(177)	(234)	(271)
Accounts receivable	627	825	916	789	767	886	938	974	1.009
DSO	48	48	40	44	45	45	45	45	45
Other receivables and other assets	114	148	262	219	167	187	193	194	198
DSO	10	11	15	14	13	13	13	13	13
Inventory	880	1.177	1.656	1.449	1.232	1.422	1.507	1.564	1.621
DOH	67	68	73	82	73	73	73	73	73
Total current assets	1.621	2.150	2.834	2.456	2.166	2.495	2.638	2.731	2.828
Suppliers	424	762	886	879	671	753	775	781	796
DPO	38	58	50	56	51	51	51	51	51
Other liabilities (incl. contract liabilities)	223	456	407	288	318	357	368	370	378
DPO	20	35	23	18	24	24	24	24	24
Tax payable	13	69	92	45	23	72	92	122	141
DPO	288	93	99	270	188	188	188	188	188
Total current liabilities	659	1.287	1.385	1.211	1.012	1.182	1.234	1.273	1.315
Working capital, net	961	863	1.449	1.245	1.154	1.313	1.403	1.459	1.513
Working Capital Variation	(961)	98	(586)	204	92	(160)	(90)	(55)	(54)
Working capital/net revenue	20%	14%	18%	19%	19%	19%	19%	19%	19%

Appendix 9: PP&E

PP&E			
	Gross Carrying amount	Accumulated Depreciation	Net
Intangible assets	464	(171)	294
Land Building and similar	1.821	(1.152)	670
Equipment and machinery	9.086	(7.683)	1.403
Other equipment and office eqp	675	(572)	102
Asset under construction	864	-	864

In USD thousands	Accumulated		Net
	Gross	Depreciation	
PP&E	12.445	(9.407)	3.038
Intangible	464	(171)	294

Appendix 10: Fixed Assets & Depreciation

Wacker Chemie

Base-date: 31/12/2023

In EUR Million

>>> Fixed assets

Unit	2020	2021	2022	2023	2024	2025	2026	2027	2028
1. Existing fixed assets & intangibles									
1.1 Fixed Assets & Depreciation									
Gross Fixed Assets									
Fixed assets				12.445	12.445	12.445	12.445	12.445	12.445
Total Fixed assets				12.445	12.445	12.445	12.445	12.445	12.445
Depreciation									
Fixed Assets				(9.407)	(8.921)	(8.436)	(7.951)	(7.465)	(6.980)
Accumulated Depreciation - Existing Fixed Assets				9.407	8.921	8.436	7.951	7.465	6.980
Depreciation					(485)	(485)	(485)	(485)	(485)
Net Fixed Assets									
Fixed Assets				3.038	3.524	4.009	4.494	4.980	5.465
Total Fixed Assets				3.038	3.524	4.009	4.494	4.980	5.465

Appendix 11: Intangibles & Amortization

Wacker Chemie

Base-date: 31/12/2023

In EUR Million

>>> Fixed assets

Unit	2020	2021	2022	2023	2024	2025	2026	2027	2028
1.2 Intangibles & Amortization									
Intangible Assets									
Gross Intangible Assets				464	464	464	464	464	464
Total Intangible Assets				464	464	464	464	464	464
Amortization									
Accumulated amortization				(171)	(171)	(171)	(171)	(171)	(171)
Accumulated Amortization - Existing Intangible Assets				171	171	171	171	171	171
Amortization of the period					-	-	-	-	-
Net Intangible Assets									
Intangible				294	294	294	294	294	294
Total Intangible Assets				294	294	294	294	294	294

Appendix 12: Capex

Wacker Chemie

Base-date: 31/12/2023

In EUR Million

>>> Fixed assets

Unit	2020	2021	2022	2023	2024	2025	2026	2027	2028
2. CAPEX									
2.1 CAPEX - Fixed Assets									
CAPEX (Tangible)					678	702	719	735	750
					3,9%				
2024					678	(13)	-	-	-
2025					702	-	-	-	-
2026					719	-	-	-	-
2027					735	-	-	-	-
2028					750	-	-	-	-
Total - Depreciation Fixed Assets CAPEX					(13)	-	-	-	-

Appendix 13: Fixed assets overview

Wacker Chemie

Base-date: 31/12/2023

In EUR Million

>>> Fixed assets

Unit	2020	2021	2022	2023	2024	2025	2026	2027	2028
3. Overview									
Fixed Assets (net) BoP					3.038	3.217	3.435	3.669	3.919
(+) Capex (Fixed Assets)					678	702	719	735	750
(-) Depreciation					(499)	(485)	(485)	(485)	(485)
Fixed Assets (net) EoP					3.038	3.217	3.435	3.669	4.183

Appendix 14: Key Financial Ratios

Key financial Ratios	2022	2023	2024 - Budget
Gross margin	26,3%	16,9%	13,8%
EBITDA margin	25,3%	12,9%	10,5%
Net profit margin	15,6%	5,1%	5,1%
ROE	25,9%	25,9%	6,4%
ROA	13,6%	3,7%	3,5%
Asset turnover	1,93	1,50	0,90
Current Ratio	2,42	2,21	2,17
Debt/equity	0,18	0,32	0,35

Appendix 15: Key Financial Ratios Among Peers

	2022	2023	Evonik Industries AG	Arkema S.A.	LANXESS Aktiengesellschaft	Covestro AG	Clariant AG	Industry Average
EV/EBITDA	3,26	8,85	6,87	7,06	11,98	15,61	8,74	10,05
EV/Revenue	0,72	0,95	0,81	0,99	0,75	0,88	1,18	0,92
EBITDA/Net Income	0,22	2,19	2,30	3,19	0,95	1,50	1,90	1,97
EBITDA margin	25,3%	10,72%	11,75%	14,03%	6,26%	5,61%	13,53%	10,23%
Mkt Cap/Equity	1,18	1,24	0,96	1,03	0,54	1,50	1,87	1,18
Mkt Cap/Revenue	4,74	0,89	0,56	0,81	0,36	0,69	0,93	0,67
Mkt Cap/Assets	0,63	0,64	0,43	0,53	0,25	0,73	0,76	0,54
ROE	31,5%	25,86%	4,70%	13,60%	4,60%	-4,20%	14,26%	6,59%
Dividend Yield		3,00%	6,40%	3,90%	0,40%	0,00%	3,00%	2,42%

Appendix 16: Dashboard and Assumptions

Wacker Chemie

Assumptions	Details:
Gross profit margin Target	78,00% Author's Analysis and Historical Patterns: DFs
Capital IQ sales Consensus	6.286 Consensus: Dashboard - Capital IQ
Depreciation & Amortization in % of Sales	-4,90% Author's Analysis and Historical Patterns: Fixed Assets
EBITDA Margin 2024	7,00% Author's Analysis based on historical patterns and Company's Guidance
Revenue 2024 Decline Average	-4,51% Author's Analysis and Historical Patterns: Revenue Segments
Revenue 2026 Polymers Growth Rate Premium	2,00% Author's Analysis and Historical Patterns: Revenue Segments
Revenue 2026 Polysilicon Growth Rate Premium	5,00% Author's Analysis and Historical Patterns: Revenue Segments
Revenue 2025 Growth (Inflation)	2,42% Inflation: Macroeconomics - Statista.com
Revenue 2026 Growth (Inflation)	2,21% Inflation: Macroeconomics - Statista.com
Revenue 2027 Growth (Inflation)	1,98% Inflation: Macroeconomics - Statista.com
Revenue 2028 Growth (Inflation)	1,88% Inflation: Macroeconomics - Statista.com

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Recommendation System	Sell	Reduce	Hold /Neutral	Buy	Strong Buy
High Risk	0% ≤	> 0% & 10% ≤	> 10% & 20% ≤	>20% & ≤ 45%	>45%
Medium Risk	-5% ≤	> -5% & 5% ≤	> 5% & 15% ≤	>15% & ≤ 30%	>30%
Low Risk	-10% ≤	> -10% & 0% ≤	>0% & ≤ 10%	>10% & ≤ 20%	>20%

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Isabela Rocha Gomes Soares, June, 2024.