



75 Years **Exploring for better**

Comet Holding AG
Annual Report
2022



c•met

Led by experience. Driven by curiosity.

As a leading technology company in the plasma control and x-ray space, we are part of the digital transformation. In all our markets, this megatrend is powering sustained growth. Focused and flexibly positioned, we want to take advantage of this driving force and grow more quickly than the market in a sustainable way. Our strong underpinnings for this are our experience and our highly skilled employees, the confidence of our customers and our sound capital base.

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Statement of the Chairman and the CEO

Record results for Comet in a year marked by global turbulence.



"The focus on our core markets and technologies once again proved its worth."

Heinz Kundert

Chairman of the Board of Directors

With sales of CHF 586 million and net income of CHF 78 million in 2022, Comet is again presenting record results, achieved in a very difficult year marked by global turbulence, supply bottlenecks, export restrictions, the pandemic and the war in Ukraine. The Board of Directors would like to express its sincere thanks to our customers, employees and suppliers, who made this achievement possible.

In this environment, our focus on our core technologies of plasma control and x-ray once again proved its worth. Through accelerated innovation, new products were brought to market, while costs were reduced thanks to significant improvements in manufacturing processes and a higher share of our manufacturing output being produced in Malaysia.

We reached a significant milestone in 2022 with the expansion of our product and service portfolio for the semiconductor and electronics market by launching certain key innovations.

Comet is one of the few companies to deliver critical technology across the whole microchip manufacturing value chain: At the front end – the core of the semiconductor manufacturing process – our RF power systems enable high-precision control of plasma processes. At the back end, in chip assembly, our x-ray modules and x-ray systems are used to inspect the finished, ever-smaller microchips and increase efficiency.

We are in an era of digitalization driven by data, artificial intelligence and connectivity. This means that, despite the temporary downturn that we are currently seeing, underlying longer-term demand for microchips is growing. In the transition year 2023, we continue to prepare for the moment when this major uptrend will reassert itself: by investing in strategic innovation, investing in the high-performance, scalable organization that we need in a world of increased complexity, and investing in our presence close to customers.



"Comet is soundly positioned and is good at overcoming challenges."

Stephan Haferl
CEO of the Comet Group

With innovations such as the Synertia® platform for real-time plasma process control, and software for increasing productivity via x-ray inspection, in 2022 we successfully consolidated our technology leadership in our principal market of semiconductor & electronics. We were also able to position ourselves favorably in the automotive, aerospace and security markets with new and digital offerings, thus laying the foundation for future growth.

We also strengthened our global positioning in 2022. Customer proximity and continuity are high priorities for us, particularly in view of the ongoing geopolitical tensions. With the decision to expand the production space in Malaysia, we have paved the way for supporting the growth of our customers in Asia even more flexibly and efficiently going forward. At the same time, we have begun to bolster our presence in Silicon Valley by preparing to consolidate our individual sites in a sustainable single facility.

Our future is inextricably linked to our ability to operate sustainably and do justice to all our stakeholders. Resource conservation is a key factor in this, as is the development of our employees, solidarity with those in need, support for education, and diversity. Comet continued its work in these important areas in 2022, and created a roadmap that sets sustainability goals. In addition, we integrated ESG criteria into the long-term variable compensation of the Executive Committee as part of a realignment of the compensation system, which will take effect in 2023. Our ambition is to become an industry leader in sustainability over the coming years and create value beyond shareholder returns.

Comet is soundly positioned and is good at overcoming challenges, a strength we have proven time and again in our 75-year history. This resilience is part of what we celebrate in our anniversary year of 2023, for which our theme is "Exploring for better." Exploring new territory, seizing opportunities, developing novel solutions for our customers, and thus helping to create a better, well-livable tomorrow for all of us – this is not just part of Comet's eventful history, it is also our DNA for the future.

The progress that Comet achieved amid the uncertainties of 2022 makes us optimistic for the years ahead. The markets in which we operate have above-average long-term growth. Comet has learned to deal with interim market corrections and has a consistent track record of adapting quickly to new situations.

In 2023, we will continue to exploit opportunities and pursue existing strategies as well as efficiency improvements, together with our more than 1,700 employees worldwide and in collaboration with our customers. We are ready to meet the challenges ahead, and ready to participate in the coming upswing from the very start.

We sincerely thank our shareholders for their loyalty to our company.



Heinz Kundert
Chairman of the
Board of Directors
of
Comet Holding AG

Stephan Haferl
CEO of the
Comet Group

Expert view



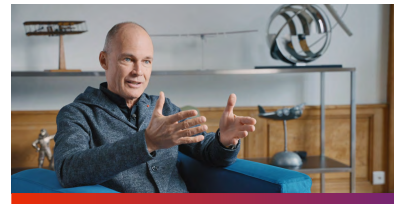
**75 years in business –
Comet through the eyes of
fellow travelers.**

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**Trends & Technologies –
X-ray 4.0: Analyzing
nanostructures in real time.**

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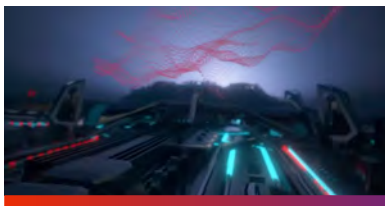
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Trends & Technologies – People & Planet

How Comet is exploring for a better future.

Highlights of 2022



Technologies at the heart of critical manufacturing processes.



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Synertia® – more than an innovative product.



[Read more](#)



X-ray: an up-and-coming technology in the semiconductor industry.



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Ready for new challenges with an expanded product portfolio.



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Expanding horizons and growing together.



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Bringing everyone on board for a sustainable future.



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Review of 2022

More record results for Comet

Comet delivered the best results in its history in 2022, despite a volatile and challenging environment.



"The expanded product portfolio paid dividends, as did the increase in production capacity in Switzerland and Malaysia."

Lisa Pataki
CFO of the Comet Group

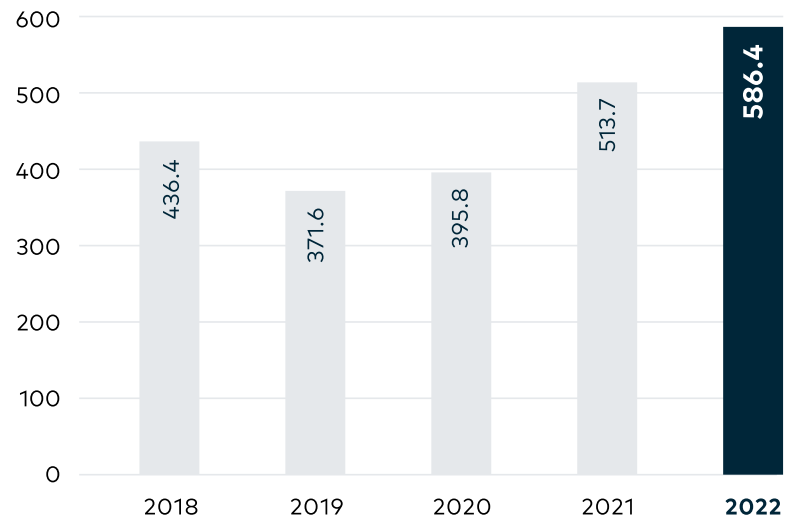
The strong demand in the semiconductor market in the first three quarters and the tangible recovery in the automotive, aerospace and security markets coincided with complexities in navigating supply chains, rising material and logistics prices, China's zero-COVID policy and trade restrictions. The fourth quarter witnessed the start of a cyclical slowdown in the semiconductor market, led by inventory corrections in memory products.

The Group generated sales growth of 14.1% from the prior year to a new total of CHF 586.4 million. EBITDA operating earnings rose by 15.7% to CHF 118.9 million. Net income increased by 15.8% to CHF 78.1 million, or CHF 10.05 per share. Free cash flow decreased from CHF 57.8 million to CHF 42.2 million, due in part to higher investment. With an equity ratio of 59.5% and debt factor of -0.2, Comet enjoys a sound financial position.

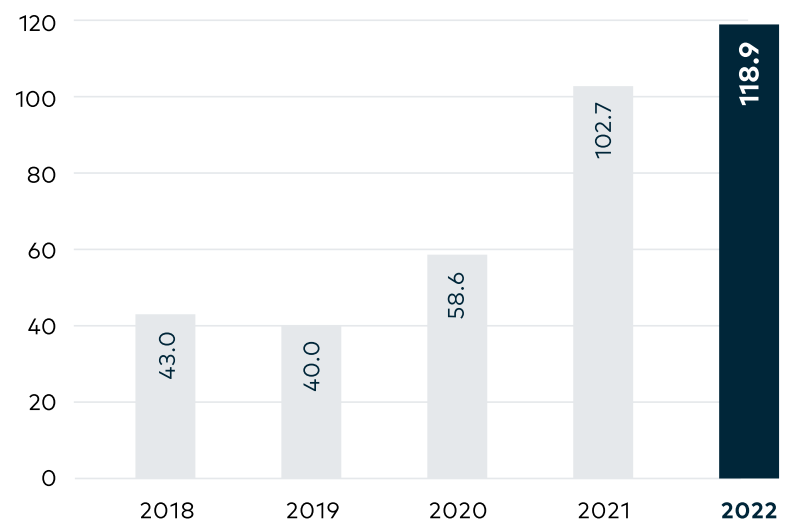
Exploiting growth opportunities in the core markets

Comet took advantage of the period of strong demand in its core markets. The expanded product portfolio paid dividends, as did the increase in production capacity in Switzerland and Malaysia. The Plasma Control Technologies (PCT) division generated the largest share of Group sales, posting sales growth of 24.6% to CHF 381.4 million (prior year: CHF 306.1 million). The x-ray business, consisting of two divisions, showed mixed results. At X-Ray Systems (IXS), the deliberate focus on high-margin orders in the semiconductor/electronics market and the impact of the zero-COVID policy in China are reflected in the results, with a decline of 6.2% in sales to CHF 130.4 million (prior year: CHF 138.9 million). X-Ray Modules (IXM) benefited from pent-up demand in its core market of non-destructive testing and from its successful entry into new markets, such as the inspection of batteries and additively manufactured components: Sales of the IXM division grew by 12.3% to CHF 88.6 million (prior year: CHF 78.9 million).

Net sales in CHF million



EBITDA in CHF million



Comet Group key consolidated financial results

In thousands of CHF	2022	2021	2020	2019	2018
Net sales	586,395	513,721	395,816	371,606	436,356
Operating income	98,975	84,085	39,329	19,939	18,771
In % of net sales	16.9%	16.4%	9.9%	5.4%	4.3%
EBITDA	118,913	102,749	58,616	39,974	42,966
In % of net sales	20.3%	20.0%	14.8%	10.8%	9.8%
Net income	78,109	67,437	27,661	12,027	12,347
In % of net sales	13.3%	13.1%	7.0%	3.2%	2.8%
Free cash flow ¹	42,173	57,767	41,649	30,112	825
In % of net sales	7.2%	11.2%	10.5%	13.1%	6.4%
Total assets	556,801	482,341	429,271	391,710	380,266
Shareholders' equity	331,532	274,981	214,956	195,948	198,292
In % of total assets	59.5%	57.0%	50.1%	50.0%	52.1%
Number of employees (year-end)					
Switzerland	647	565	474	494	509
International	1,116	1,006	929	836	837
Total	1,763	1,571	1,403	1,330	1,346

¹ Net cash provided by operating activities and net cash (used in) investing activities, as per consolidated statement of cash flows.

Continued earnings growth despite a difficult environment

Comet increased its operating earnings at EBITDA level from CHF 102.7 million to CHF 118.9 million, with the EBITDA margin rising from 20.0% to 20.3%. Excluding the impact from Comet's legal expense for its litigation to protect its trade secrets against XP Power, the adjusted EBITDA margin was 21.8%. Inflationary pressures, longer lead times in the supply chain and shutdowns in China contributed to margin pressures throughout the year.

The PCT division made the largest contribution to the Group's EBITDA growth. It delivered EBITDA of CHF 104.9 million, up 30.4% from the prior year. The EBITDA margin rose by 120 basis points to 27.5% and – on an adjusted EBITDA basis – by 360 basis points to 29.9%. In the X-Ray Systems business (IXS), a combination of lower sales and higher investment in the development of strategic products resulted in EBITDA of CHF 1.6 million, down from CHF 8.9 million in the year before. The EBITDA margin narrowed from 6.4% to 1.2%. The X-Ray Modules business (IXM) generated EBITDA of CHF 15.7 million, slightly above the previous year's CHF 15.3 million. The margin eased by 170 basis points to 17.7% owing to higher procurement costs resulting from bottlenecks in raw materials, components and logistics.

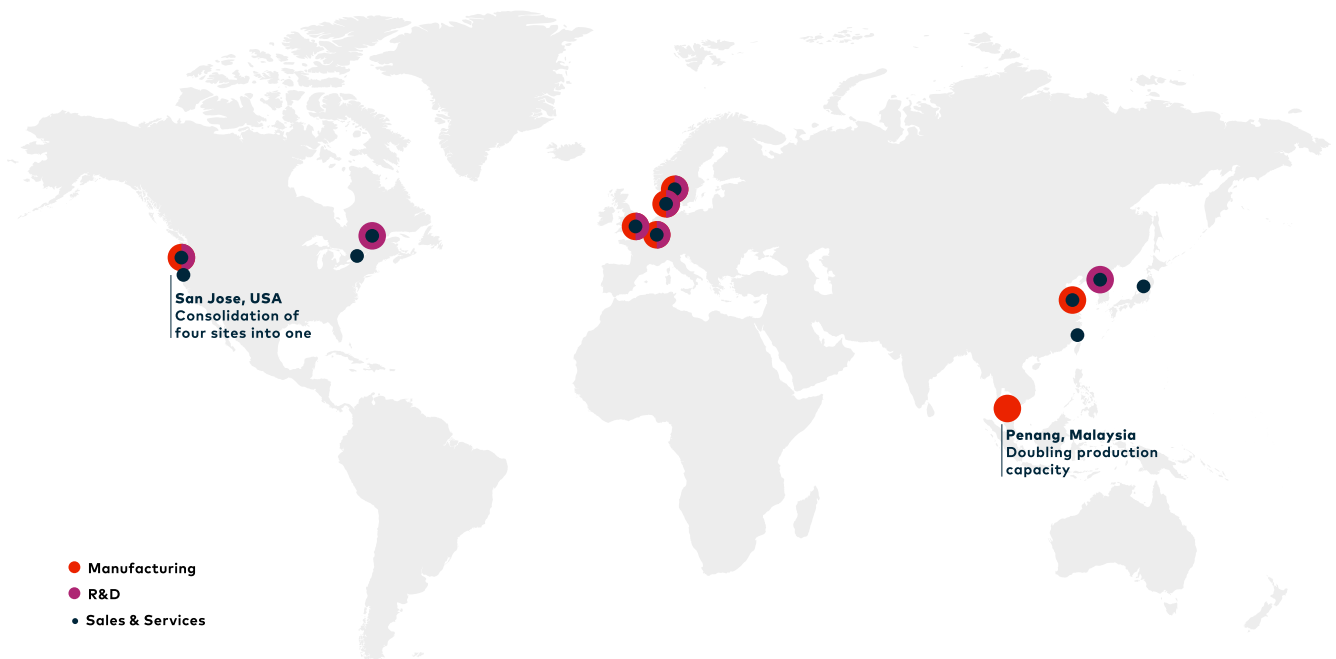
The Group's net income increased by 15.8% from CHF 67.4 million to CHF 78.1 million. At 26.3%, the return on capital employed remained almost at the previous year's level (26.4%).

Comet's overall working capital requirements increased. To mitigate the bottlenecks in the supply chain, Comet raised the safety stock. As a result, operating cash flow fell below the prior year. With capital investments up significantly, free cash flow therefore decreased from CHF 57.8 million to CHF 42.2 million.

Implementation of the strategic Boost program successfully continued

Despite the volatile environment, Comet maintained its strategic focus, with progress in all three dimensions of the Boost program – growth, efficiency and culture ([Boost strategic program: What we achieved in 2022](#)).

Strong portfolio for future growth: In 2022, Comet reached a milestone in the expansion of the product and service portfolio for its customers in the semiconductor and electronics market. It launched the innovative Synertia® RF power delivery platform, which offers customers unique and energy-efficient ways to control critical plasma processes in real time. Meanwhile, with the award-winning MesoFocus x-ray module, the company entered and made inroads into the battery testing market. In the x-ray systems business, Comet introduced new software offerings, such as VistaX, a software that helps to improve customers' productivity. The Group also made important headway in developing new solutions, in close collaboration with a strategic customer, for the inspection of advanced packages containing vertically stacked microchips.



More flexibly positioned: Comet continued the systematic expansion of its geographic presence in its strategic growth regions. The aim is to gain customer proximity, create access to new supply chains and boost operational flexibility and business continuity. With this in mind, Comet decided in 2022 to expand its production facilities in Malaysia earlier than planned, as well as to bring the individual sites in Silicon Valley together under one roof.

Becoming a scalable organization: The Group made critical progress toward a more scalable global organization, in the continuous optimization of supply chains, the standardization of products, the automation of processes, and in digital infrastructure. Comet introduced a more robust Global Operational Excellence function and reinforced the global sales organization in the X-Ray Systems business. These moves,

among others, will allow Comet to operate more efficiently and better meet customer needs.

Strengthened identity, values and employer attractiveness: In 2022, Comet continued the culture, training and sustainability programs ([Sustainability 2022](#)) for its employees launched as part of the strategic Boost program. A notable initiative is the Up & Beyond Award, which was launched in 2022 and presented to 175 employees for modeling the company's values in exemplary ways. A milestone for the shared corporate identity was achieved in the third quarter with the completion of the rebranding from Yxlon to Comet Yxlon.

To address the industry's skills shortage, Comet stepped up its collaboration with universities and invested in the better differentiation of its employer brand. It invested in a training workshop for apprentices at its Swiss site, increased its engagement for talent recruitment at trade shows in the semiconductor market, and devised a new compensation model to be introduced in 2023 ([Compensation report 2022](#)).

New management team

Comet has been under new executive leadership since September 2022: Stephan Haferl, the former President of the X-Ray Modules division, who has more than 15 years of experience at Comet, took over as CEO from Kevin Crofton, who left the company at the end of August. The new President of the X-Ray Modules division is Michael Berger, who previously served for several years as the division's Vice President of Operations. In July, for the vacant position of President of the X-Ray Systems division, Comet also brought on board Dionys van de Ven, an internationally proven expert in the x-ray business. Lastly, Michael Kammerer, President of the Plasma Control Technologies division, retired at the end of 2022. Taking over for him at the helm of PCT on March 1, 2023 is Joeri Durinckx, who brings over 20 years of experience in the semiconductor industry.

At the Board level, the election of Edeltraud Leibrock at the 2022 Annual Shareholder Meeting strengthened the Board in the important areas of innovation, digitalization, transformation and governance of IT- and technology-driven organizations.

Dividend

At the Annual Shareholder Meeting on April 14, 2023, the Board of Directors will propose a dividend of CHF 3.70 per share (prior year: CHF 3.50). This corresponds to a distribution of 36.8% of the Group's net income (prior year: 40.3%).

Plasma Control Technologies

2022 was a multi-faceted year for the PCT division. In the first nine months, the semiconductor industry ran at full speed despite persistent bottlenecks in the supply chains, the conflict in Eastern Europe and the restrictive measures to curb the pandemic in China. This brought record sales, booming new orders and high order backlogs. In the last three months of the year, however, the sentiment deteriorated rapidly.

Amid the impact of rising interest rates, global economic concerns, and the onset of overcapacity, particularly in memory chips, microchip manufacturers became increasingly reluctant to invest. This together with the restrictions imposed by the United States on exports to China caused a temporary downturn in the semiconductor cycle after three years of unrestrained growth. New orders and order backlog thus declined noticeably toward the end of the year.



"We managed our growth very effectively and reliably served our customers."

Michael Kammerer
President, Plasma Control Technologies

Despite the dip in growth that has set in earlier than forecast, the PCT division steadfastly executed its strategy in order to be ready for the next upswing. With the market launch of the first variants of the Synertia® family of radio frequency generators, PCT has reached a milestone in the development of a complete RF power delivery subsystem. The launch of Synertia® unlocks a market with estimated annual sales in 2025 of well over CHF 1 billion. Outstanding feedback from prospective customers is witness to the great market opportunities for the new family of products. In combination with the also newly developed 3rd-generation technology platform, customers will gain a new level of real-time insight into plasma processes and thus achieve significantly better performance in semiconductor manufacturing than with the systems in use today.

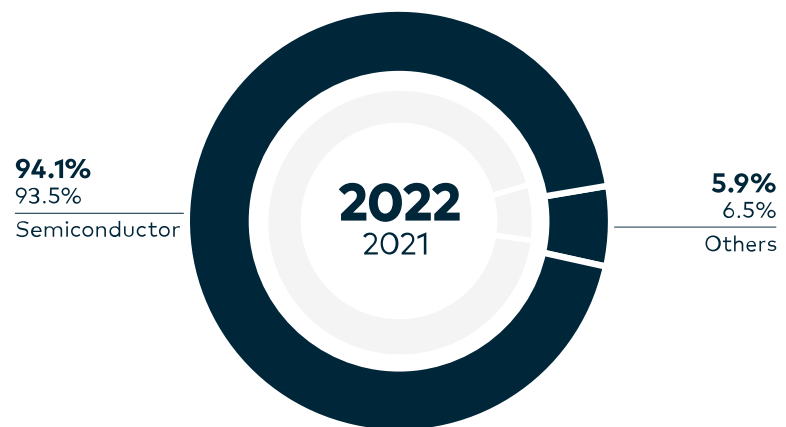
In parallel with the market launch of Synertia®, production capacity was adjusted to meet the expected increase in demand over the next few years. In Flamatt, Switzerland, production capacity for vacuum capacitors was again increased in the existing facilities, and the transfer of volume production of RF matches from the US site in San Jose to Penang, Malaysia, was nearly completed. With the assembly lines in Penang fully utilized at the end of the year, it was decided to double the manufacturing capacity at this site. The additional capacity will be commissioned incrementally in the course of 2023 and is to meet the expected rise in demand up to 2025.

PCT increased sales by 24.6% to CHF 381.4 million, compared to CHF 306.1 million in the prior year. Thanks to the ramp-up of production at the best-cost site in Penang and general measures to reduce costs, PCT achieved 30.4% higher operating earnings of CHF 104.9 million at EBITDA level (prior year: CHF 80.5 million). The EBITDA margin thus improved to 27.5%, from 26.3% in the prior year. Excluding the one-off expense for Comet's legal action against XP Power to defend Comet's trade secrets, EBITDA of the PCT division amounted to CHF 113.9 million, at a margin of 29.9%.

Key financials of Plasma Control Technologies at a glance

CHFm	2022	2021
Net sales	381.4	306.1
EBITDA	104.9	80.5
EBITDA margin	27.5%	26.3%
Number of employees worldwide	998	826

Sales of Plasma Control Technologies division by market



"We reached important milestones and see big opportunities for the division."

Dionys van de Ven
President, X-Ray Systems

X-Ray Systems

The most important market segments of the X-Ray Systems division differed in their trajectories in fiscal year 2022. The semiconductor and electronics industry slowed visibly after a strong first three quarters. In contrast, the aerospace industry continued its upswing, benefiting from the desire to travel after the pandemic subsided in large parts of the world. The recovery in the auto industry was held back by component shortages, which the boom in new registrations of electric vehicles did not fully make up for.

Of the Group's three divisions, IXS was the one most affected by the Chinese zero-COVID policy. It led to the postponement of system installations at customers in China, mainly in the first half of the year. Comet could not fully compensate this in the second half of the year, especially as the growing uncertainties in the market led to hesitant ordering behavior on the part of customers. Rapidly rising COVID-19 case numbers at the end of the year also impacted business in China.

IXS again made encouraging progress in this challenging environment. The streamlining of the portfolio to focus on standard systems is essentially complete, the number of software platforms offered has been reduced, and the adjustments to the organization are taking shape. Headway was also made with a new version of the proven Cheetah series, which will lead to significantly higher productivity and repeatability thanks to a new water-cooled tube and new image acquisition set-up. As well, VistaX, a novel type of software, opens up new horizons in imaging and sets standards in terms of productivity.

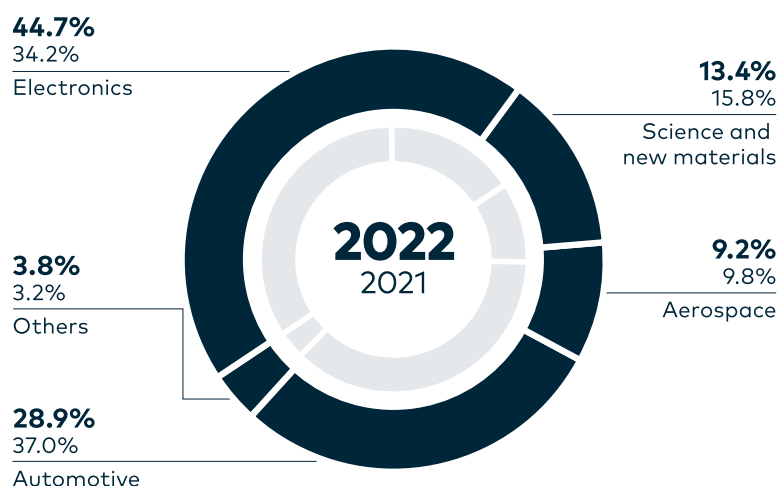
In the promising advanced packaging business, the collaboration with a leading company in this space is exceeding expectations and demonstrates that x-ray technology holds great potential in this market. IXS has an opportunity to expand the boundaries of microchip inspection. Thanks to product quality improvements achieved, IXS is well-placed to become an indispensable partner to the semiconductor industry in the coming years.

Due to the combination of IXS's focus on winning higher-return orders in the semiconductor and electronics market instead of less profitable volume business, and the adverse impact from China's COVID-19 lockdowns in the first half of the year, net sales in 2022 decreased by 6.2% to CHF 130.4 million (prior year: CHF 138.9 million). As a result of the lower volumes, EBITDA declined to CHF 1.6 million from CHF 8.9 million in the previous year, leading to a reduction in the EBITDA margin from 6.4% to 1.2%.

Key financials of X-Ray Systems at a glance

CHFm	2022	2021
Net sales	130.4	138.9
EBITDA	1.6	8.9
EBITDA margin	1.2%	6.4%
Number of employees worldwide	430	435

Sales of X-Ray Systems division by market



X-Ray Modules

The X-Ray Modules division operated in a robust market environment during the fiscal year. Growth in the battery business, tighter manufacturing tolerances and new inspection requirements are accelerating the demand for in-line inspection solutions. The existing technology gaps in in-line inspection create excellent market opportunities for IXM's newly launched products, especially in Asia. Volumes in the security inspection market remain at a high level worldwide. In the traditional non-destructive testing markets, such as the inspection of castings, sales in-



"When the market upswing arrived, we were well-prepared with our new products."

Michael Berger

President, X-Ray Modules

creased due to pent-up demand and the return to more robust production. By contrast, the trend in the oil and gas markets was subdued.

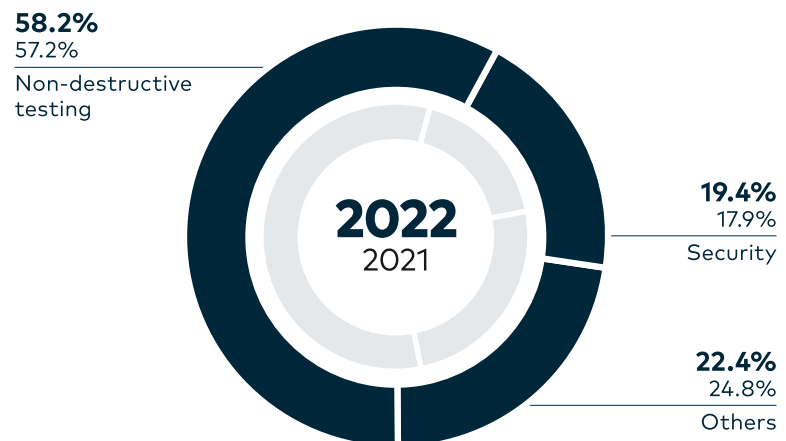
IXM performed well in all key non-destructive testing and security inspection markets. New tubes and modules for the semiconductor and electronics industry as well as growing applications in battery testing, additive manufacturing and metrology ensured robust growth. This was despite noticeable bottlenecks in the supply chains and the impacts of the zero-COVID strategy in China. Stable or increasing market shares in the traditional markets and in the semiconductor and electronics industry underline the excellent market position and favorable prospects for the division.

Net sales grew by 12.3% to CHF 88.6 million (prior year: CHF 78.9 million). EBITDA improved by 2.5% to CHF 15.7 million (prior year: CHF 15.3 million). The EBITDA margin decreased from 19.4% to 17.7% mainly due to a complex supply chain landscape that resulted in limited deliveries, lower efficiency gains and capacity utilization than expected, as well as due to higher R&D spend compared to the prior year.

Key financials of X-Ray Modules at a glance

CHFm	2022	2021
Net sales	88.6	78.9
EBITDA	15.7	15.3
EBITDA margin	17.7%	19.4%
Number of employees worldwide	335	310

Sales of X-Ray Modules division by market



Information for investors

		2022	2021	2020	2019	2018
Capital stock	CHF	7,773,966	7,769,534	7,767,887	7,764,208	7,759,882
Number of shares (Dec. 31)		7,773,966	7,769,534	7,767,887	7,764,208	7,759,882
Weighted average number of shares outstanding		7,772,023	7,768,812	7,766,108	7,762,845	7,757,904
Stock price						
High for the year (Jan. 4, 2022)	CHF	351.50	378.00	198.20	127.00	168.90
Low for the year (Oct. 13, 2022)	CHF	136.40	195.00	71.30	76.90	74.45
Year-end (Dec. 31)	CHF	195.80	336.50	198.20	122.60	79.75
Earnings per share	CHF	10.05	8.68	3.56	1.55	1.59
Distribution per share ¹	CHF	3.70	3.50	1.30	1.00	1.20
P/E ratio (at year-end price) ²		19	39	56	79	50
Distribution yield (at year-end price)	%	1.9%	1.0%	0.7%	0.8%	1.5%
Equity per share ³	CHF	42.7	35.4	27.7	25.2	25.6
Market capitalization (Dec. 31)	CHFm	1,522	2,614	1,540	952	619

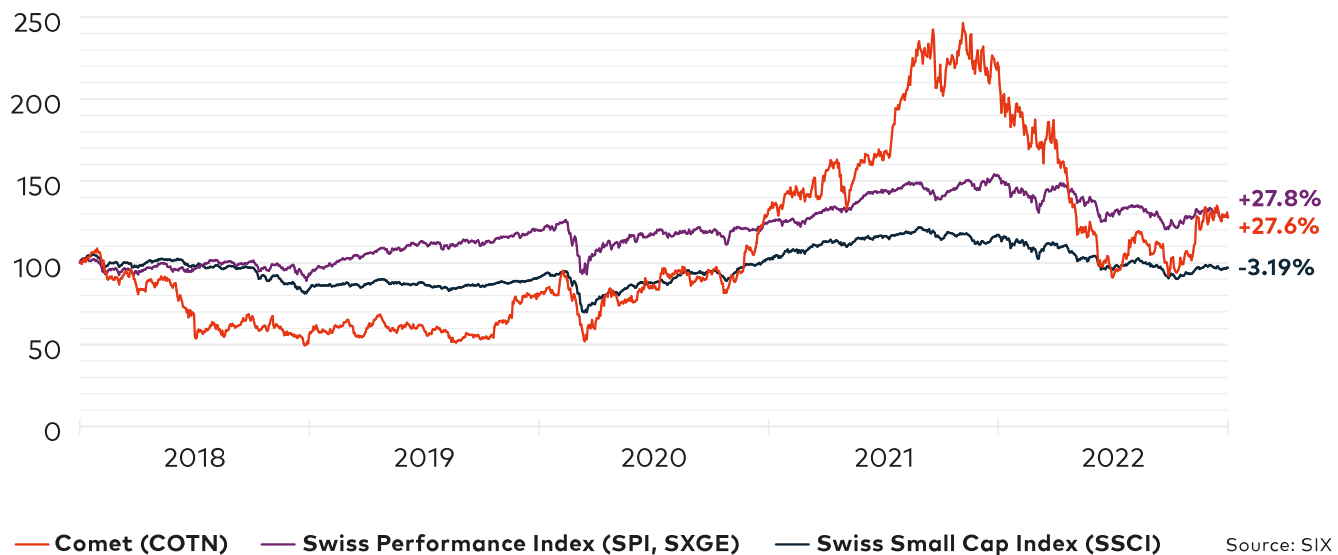
¹ 2022: Proposal by the Board of Directors.

² Year-end share price divided by earnings per share

³ Shareholders' equity divided by the weighted average number of shares outstanding.

Comet stock price

01.01.2018 = 100, Prices indexed





What we care about

Making the future, better.

At Comet, we firmly believe that in a world of finite resources, innovation makes all our lives better. That's why we are committed to working with our customers to find solutions that enable sustainable progress and improve safety, security and quality of life for us all. Our vision is to be the high-tech company of choice for all those who actively shape the future.

Strategy execution on track

Enabling digitalization for a sustainable, connected future.

We live in an ever more complex and interconnected world, one that relies on semiconductors. As a supplier of critical technologies, Comet helps its customers manufacture the necessary ever-smaller and more powerful components of this digital world more efficiently and in ways that conserve more resources. Comet is on track in the implementation of its focus strategy formulated at the end of 2019. As a preferred partner to our customers in the semiconductor and electronics industries as well as the automotive, aerospace and security sectors, we want to grow side by side with our customers, shareholders, partners and employees and contribute to a sustainable future.

Times of change: further digitalization and rapid adoption of artificial intelligence

The conflict in Ukraine, trade restrictions, COVID-19, supply chain problems, rising prices, energy shortages, climate change – life and business have become more complex with the events of 2022. While digitalization cannot prevent global warming or geopolitical conflicts, it is an important pillar for a more sustainable, better future. And it is everywhere: from cars to wireless headphones, from smartwatches to game consoles – modern life is hardly conceivable without the microchips inside everyday objects.

Thanks to increasingly powerful computers, the use of AI technologies is also on the rise, helping to manage disasters (such as with [DeepEye](#)), select suppliers more efficiently (e.g., with [Scoutbee](#)) or provide essential information for protecting forests (e.g., [GreenCityWatch](#)). AI applications such as the chatbot ChatGPT and art generators Stable Diffusion and DALL-E have also shown in 2022 that AI not only analyzes large amounts of data at blazing speeds but can generate images or videos, and tell jokes – in a word, AI can be creative.

All this is leading to a further enormous increase in the volumes of data exchanged and processed, to the expansion of data infrastructure and (despite the market's current, temporary correction) to structural growth in demand for semiconductor components. We live in the age of semiconductors. They are so essential that governments in Asia, Europe and the USA are investing in local supply chains and onshoring innovation and manufacturing processes to ensure long-term access to such vital chips.

Comet's technology enables critical manufacturing processes

Semiconductor chips and sensors are the key building blocks of our digital world. In their production, Comet's technologies play a critical role. The ever-advancing digitalization therefore continues to offer Comet

great growth opportunities in its two core technologies of plasma control and x-ray: both technologies safeguard the efficiency, quality and reliability of customers' highly complex manufacturing steps in the respective applications.

The market demands high-performance chips with faster processing speeds and lower energy consumption in ever shorter development cycles. The fabrication of these powerful microchips requires even more precise, reliable and stable production processes. This manifests itself in rising demand for plasma technology-based equipment for the production of 3D chip structures, advanced memory (3D NAND) and also of new microprocessors.

Comet's products: essential in the manufacture of advanced chips and components

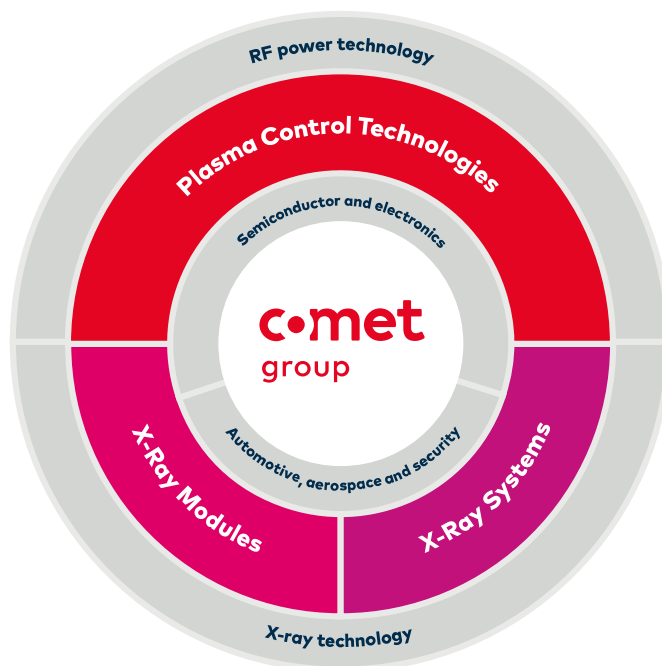
As the global market leader in vacuum capacitors and RF matching networks, Comet already enjoys a strong market position. By bolstering our product portfolio, we aim to provide semiconductor equipment manufacturers and chipmakers with cutting-edge technologies for solving their growing challenges, and thus plan to expand our market. Comet intends to participate in this growth through the new Synertia® radio frequency system, which supports data-driven process analysis and has generated great interest from customers since its market launch in summer 2022, and through other innovations, such as the newly introduced RF match controller.

For the Group's x-ray businesses, the trends in the semiconductor and electronics market hold rich potential. Electronics firms are increasingly automating the production of critical components, building them additively, making them smaller and with less material. Individual "chiplets" are combined into high-performance multi-chip modules. Their inspection is demanding and requires the increased use of x-ray technology. In addition, to ensure the quality and safety of their products, manufacturers throughout industry are placing growing emphasis on high-volume series testing and the automated improvement of their processes.

Data analysis and digital services are therefore fast gaining in importance for Comet. As the market leader in high-performance x-ray tubes and one of the top vendors of 3D inspection systems for electronic components, the Comet Group is very well positioned with its two x-ray divisions. Thanks to joint development projects and workflows realized with the subsidiary Object Research Systems (ORS) acquired in 2020 (a specialist in 3D visualization and analysis software for sophisticated 2D/3D imaging studies), Comet is enabling its x-ray system customers to identify defects in complex microchips even more quickly and reliably (see video: [How are microchips built?](#)). With the successful expansion of the portfolio of high-performance x-ray tubes by the addition of the MesoFocus and FXE series, Comet's modules business is also making inroads in the semiconductor, electronics and battery markets. In fact, these will become the IXM division's largest markets by the end of 2025.

The Comet Group

2 core technologies, 3 businesses, 4 markets, with the primary focus on semiconductor & electronics



Plasma Control Technologies

Radio frequency components and system solutions for plasma applications

Technology

Radio frequency (RF) power

Product

System solutions to provide RF technology, consisting of:

- Impedance matching networks
- RF generators
- Vacuum capacitors

X-Ray Modules

Powerhouse for x-ray components and modules

Technology

X-ray

Products

- Industrial x-ray modules and components
- X-ray tubes
- High-voltage generators
- Software
- Accessories

X-Ray Systems

High-end x-raysystem solutions for industrial environments, from R&D to production settings.

Technology

X-ray

Products

- X-ray and computed tomography inspection systems
- Software for x-ray visualization and analytics
- Customized services based on machine learning and artificial intelligence

Focus strategy unchanged, implementation on course

By focusing on plasma control and x-ray technology, Comet has defined how it intends to exploit the significant potential of the digital world. Since the divestiture of the ebeam business in 2020, Comet is concentrating on the technology spaces of plasma control and x-ray as well as on the expansion of the service business by leveraging artificial intelligence and machine learning.

Four growth markets, with semiconductor & electronics the key one

Comet is focused on four core markets with expected strong long-term growth. First and foremost, the semiconductor and electronics market holds enormous potential for both the plasma control and x-ray businesses. The aerospace, automotive and security markets offer Comet growth opportunities in specific areas, such as the inspection of batteries for electric vehicles.

Structural long-term demand growth in the semiconductor and electronics market

Semiconductor and electronics decidedly remain Comet's key market sectors. Despite the cyclicity of these industries, the ambitious roadmaps of the leading semiconductor manufacturers to develop more powerful and energy-saving technologies are in the medium and long term driving growth and investment in infrastructure for semiconductor fabrication. Furthermore, governments are increasingly focused on developing regional supply chains independent of other geographies. Based on announcements to date, a total of 119 new semiconductor fabs are expected to come on stream in the USA, Europe and Asia by 2025. Experts currently expect investment in RF power subsystems to amount to USD 2.37 billion until 2025. The industry's spending on RF power subsystems as a share of its total expenditure on wafer fabrication equipment continues to rise at a disproportionately higher rate due to ever smaller technology nodes (chip feature sizes) and complex microchip architectures (source: TechInsights). In this market, Comet expects its high-tech x-ray and plasma control solutions to generate up to 75% of the Group's sales in 2025.

Attractive potential in automotive, aerospace and security thanks to digitalization

In addition, Comet sees continuing good opportunities for the utilization of its technology in the aerospace, automotive and security inspection markets. Comet's traditional markets have gradually been recovering after the pandemic-related drop in demand and are expected to make up about one-quarter of the Comet Group's sales in 2025. Here, too, digitalization is creating an opportunity. The automotive industry is now considered the largest single driver of semiconductor growth. This is because more and more sensors and microchips are needed to enable power control, environmental sensing, the internet of vehicles, real-time road monitoring as well as autonomous driving. Experts predict that the number of light vehicles produced worldwide will grow at a rate (CAGR) of around 5% annually in the four-year period from 2022

to 2025. They further expect an accelerated increase in the proportion of cars with electric or hybrid drive systems to about 28% in 2025 (source: IHS Markit 2023). This also increases the relative amount of safety inspection required. The situation is similar in the aerospace sector. Here, industry analysts expect an annual increase in semiconductor technology content of approximately 8.8% from 2022 to 2025 (source: Gartner Semiconductor Forecast Database for Q4 2022). In airplanes, too, the trend is toward employing hybrid electric drives (which are more environmentally friendly) and hence implies the use of more semiconductors and thus more inspection.

Boost.

With our Boost strategic program, we want to contribute even more to our customers' success and – as a high-performing, scalable organization – create added value for all our stakeholders.



Efficiency

Lean, robust processes worldwide

We are investing in operational excellence and cost-effective manufacturing. To do this, we are systematizing, standardizing, harmonizing and training processes and policies across all sites and strengthening our management system. An important driver is the automation and digitalization of processes.

Growth

Customer proximity, innovative technologies

We are increasing our presence close to our customers in the growth regions of North America and Asia.

We are expanding our product and service portfolio with a focus on the semiconductor and electronics market: We are innovating with the Synertia® RF power platform, standardized x-ray systems, micro- and nanofocus x-ray sources, and unique solutions based on artificial intelligence.

Culture

People

We are continually developing our employees: We are investing in values-based leadership and in an attractive work environment that fosters development and personal growth.

We are entrenching and reinforcing our culture of sustainability.

Grow stronger and realize potential.

Comet is on its way to becoming more high-performing, more flexible and faster in order to realize its full potential. Our goal is to grow into a highly profitable company with CHF 1 billion in sales and clear market leadership in each of the markets we serve. As important levers for achieving this, the Group is pooling internal resources and strengthening and scaling its organization. For this transformation, we are focusing on three key thrusts: boosting growth, enhancing efficiency, and strengthening culture.

Our achievements in 2022

Growth

Expanded the product portfolio:

- **Launched the Synertia® RF power subsystem (PCT)**
- Launched the Gen 3 match controller (PCT)
- Entered the battery market with the award-winning MesoFocus x-ray module (IXM)
- Integrated an AI-based defect visualization software into the x-ray systems and began market launches (IXS)
- Launched the VistaX software
- **Strengthened the x-ray sales organization in Korea and Japan**

Efficiency

- **Reorganized and significantly strengthened the Global Operational Excellence function**
- **Digitalization:** Improved the digital infrastructure and the cybersecurity rating
- **Introduced or expanded global tools**, e.g., e-learning
- **Took lean and focusing measures**, such as reducing the number of hardware and software platforms at IXS
- **Footprint and production:** Started expansion of production capacity in Penang, Malaysia
- Launched a project to merge the individual sites in Silicon Valley at one single site in San Jose, California

Culture

- **Completed the Comet rebranding and honed the employer brand**
- **Continued to implement the ESG program**
- **Intensified employee development and advancement**
- **Strengthened values:** Introduced the Up & Beyond Award, presented to 175 employees
- **New, cutting-edge incentive plan for employees is to be rolled out in 2023**

Boost growth.

Customer intimacy and product portfolio: The expansion of the product and service portfolio with a focus on the semiconductor market remains a central priority for Comet as a technology leader. The prerequisite is a deep understanding of our customers, who are involved in the development of technological solutions at the earliest possible stage. The aim is to help customers increase their productivity through a broader and more capable offering from Comet. At PCT, for example, the objective is to commercialize the unique Synertia® RF power subsystem launched in summer 2022 and the match controller and to continually bring to market further variants required by customers. At IXS,

priority is given to the further development of unique data science solutions based on artificial intelligence and machine learning. At IXM, the focus is on high-end x-ray modules for electronics and battery inspection, with new launches in the XP/UP, Ion, MF and FXE series.

Proximity to customers worldwide: A core task remains the expansion of the capacity levels and organization in the growth regions relevant for Comet, taking into account rising geopolitical tensions and the growing investment in local supply chains. Accordingly, Comet expanded its production capacity for matching networks in Malaysia. In Aachen, Germany, Comet is ready to produce the Synertia® generator at its fully equipped and highly automated production site.

Enhance efficiency.

Processes and organization: Subjects such as the optimization of supply chains, the standardization of products, the automation of production processes and the implementation of lean measures are permanently on the agenda at Comet.

As a globally growing company, Comet also sees great potential in further improving the worldwide collaboration of corporate functions and regional execution. The goal is a scalable organization that can respond to regional needs with agility. In order to better and more cost-effectively manage this expansion in the future, Comet established a Global Operational Excellence organization at Group level in 2022. The team acts as a center of expertise for all operational excellence issues, such as regarding logistics, trade compliance, real estate, environmental health and safety, and facility management.

Digitalization: Comet also made progress in the area of digital infrastructure and improved its cybersecurity rating. In addition, the Group launched various global digital tools to harmonize and standardize processes.

Strengthen corporate culture.

Continuous learning, development, and empowerment are central to Comet, especially when it comes to improved collaboration, customer focus, and speed. With dedicated training courses, Comet continually supports employees' development at different levels of the organization and creates common foundations for better collaboration. In 2022, for example, not only were various employee development plans implemented as part of the new talent review process, all managers worldwide were also trained in the Group's new approach to performance and development planning, which promotes team goals and a feedback culture and empowers employees to take responsibility for their goals and development needs. Comet launched the Up & Beyond Award, which was presented to a total of 175 employees for their outstanding modeling of Comet's values.

A milestone for the shared corporate identity and culture was also reached in 2022 with the completion of the rebranding from Yxlon to Comet Yxlon.

Attractive employer: In view of the shortage of skilled personnel in the labor market, especially of R&D specialists and engineers, Comet stepped up activities in 2022 to better differentiate its employer brand. Comet continues to network and engage with talented young people while they are still students, along with identifying and developing existing talent within the company. In 2022, Comet thus further cemented its partnership with the University of Illinois to support students, invested in a workshop facility for training apprentices at the Swiss site in Flamatt, and increased its engagement for talent recruitment at trade shows in the semiconductor market. In addition, Comet developed a new compensation system, to be rolled out in 2023.

A safe working environment and clear rules and roles: To ensure that any unethical behavior can be reported securely and confidentially in accordance with Comet's new guidelines based on the EU Whistleblower Directive, in 2022 we introduced a new global integrity hotline. Training sessions were also held to raise employees' awareness on various compliance subjects and guidelines.

Thinking and working sustainably is integral to the Comet Group and has been developed and promoted even more systematically since 2021 under our ESG program. Thus, as a staff initiative, Comet employees around the world collected 75 ideas for combating climate change and held various workshops on the subject, which are now being translated into appropriate action (see the Sustainability Report).

Our strategic initiatives until 2025

Plasma Control Technologies

Growing stronger.

Increase sales volume with existing customers, add new products and applications and heighten flexibility

Initiatives

Boost growth.

Expand the product portfolio:

- Commercialize the Synertia RF power delivery platform
- Launch vacuum capacitors with high power density
- Intensify key account management
- Strengthen the presence in Asia

Enhance efficiency.

- Expand Penang as a strategic manufacturing site
- Increase efficiency and flexibility of functional departments

X-Ray Modules

Exploiting potential.

Expand the product portfolio to tap new, adjacent market segments

Initiatives

Boost growth.

- Enter the semiconductor and electronics inspection market
- Expand the components and modules portfolio with a focus on the core markets of automotive, aerospace, and semiconductor & electronics inspection
- Launch new platforms for x-ray tubes and for high-voltage generators for even more flexibility in designing the offering

Enhance efficiency.

- Drive operational and business excellence through digitalization and more systematic application of lean approaches

X-Ray Systems

Focusing.

Focus on volume markets, standardized systems, and expansion of services that are based on artificial intelligence and machine/deep learning

Initiatives

Boost growth.

- Expand the portfolio in fast-growing markets
- Expand digital services, with a focus on improving customers' yield and efficiency

Enhance efficiency.

Standardize throughout:

- Focus on modular, configurable standardized products
- Standardize on a single software platform for x-ray systems' user interface
- Increase focus on product tailoring and integration

Group

Creating the foundation for further growth.

Initiatives

Boost growth.

- Further develop the global organizational presence in line with the strategy

Enhance efficiency.

- Develop policies, processes and tools to further improve and harmonize processes and to create a globally scalable organization
- Drive the Group-wide digitalization initiatives forward

Strengthen culture.

- Strengthen the employer brand
- Execute the sustainability strategy, including embedding sustainability at all levels of the organization and implementing the climate roadmap
- Continue initiatives for employee development and advancement and for diversity, equity, inclusion and belonging
- Deepen the values-based leadership culture

Outlook for 2023

Bridging the slowdown and ensuring long-term growth.

Comet has started the new fiscal year financially robust and structurally stronger – and with a balanced market mix that enables it to parry the slowdown in the semiconductor market. The focus for 2023 is on exploiting the potential of the traditional automotive, aerospace and security markets and preparing for the next upturn in the semiconductor market.

Correction in the semiconductor market, but traditional markets on track

The semiconductor market is in a correction phase, which has been accentuated since at least the fourth quarter of 2022 by the US export restrictions against China. Overall for 2023, experts are projecting a global decline of 16–20% in investment in chip manufacturing equipment compared to the prior year. Like other market participants, chip manufacturers and equipment suppliers, Comet has scaled back its expectations accordingly – but only temporarily. The reason is that, underneath the current market downswing, our era of digitalization in an increasingly connected and integrated world provides continued structural support for demand growth. Artificial intelligence, augmented and virtual reality, autonomous driving, and new technological applications are constantly fueling the use of data. This means that the demand for microchips will increase in the medium and long term – an opportunity for which Comet is preparing even in the current environment.

In Comet's traditional volume markets of automotive, aerospace and security, the outlook for 2023 is positive overall, with differences in degree. In the automotive sector, industry analysts predict a further slight increase in global sales of new vehicles, led by demand for electric vehicles, which is to rise by 40%. The aerospace and security industries, too, are expected to see growth in global terms as travel continues to increase. These trends should have a positive impact for Comet in 2023, especially on demand for x-ray inspection solutions for non-destructive testing.

Macroeconomic unknowns

The macroeconomic factors remain difficult to assess. While the threats from inflation and possible energy shortages in Europe appear to be easing somewhat, the risks that make it more difficult to plan and to do business this year include – besides the war in Ukraine – some bottlenecks in supply chains, rising logistics and energy prices, and the possibility of a recession. In addition, it is important to closely monitor the US export restrictions on the supply of semiconductor equipment to certain Chinese customers and to review their legal implications. For Comet, 2023 will therefore be about successfully riding

"With digitalization progressing, the long-term drivers of our business are intact. We are getting ready for the next upswing."

Stephan Haferl
CEO of the Comet Group

out the slowdown while preparing for the next semiconductor upswing and at the same time managing macroeconomic risks.



The Comet Executive Committee. From left to right: Dionys van de Ven (President of X-Ray Systems), Keighley Peters (CIO), Lisa Pataki (CFO), Stephan Haferl (CEO), Michael Kammerer (President of Plasma Control Technologies), Michael Berger (President of X-Ray Modules)

In a sound position to take advantage of growth opportunities and manage risks

Comet has the financial and organizational strength and resilience to stay its course in this volatile environment. In view of the decline expected in the semiconductor market for 2023, management has taken proactive measures to reduce the company's variable costs. At the same time, Comet will continue to invest in its strategic initiatives, advance its research and development as planned, commercialize product innovations, expand capacity and position itself for the next upturn. This includes the strategic expansion of global production capacity, notably by investing in Comet's production site in Penang, Malaysia, as well as merging the currently separate sites in Silicon Valley into one location. The aim is to make the most of the medium- and long-term growth opportunities available to Comet in the front-end and back-end segments of the semiconductor industry. That is what we are preparing for in this transition year of 2023. Efforts along these lines include the continuous development of our employees, as well as further improvements in sustainability. We will remain committed to our strategy built around growth, efficiency and culture and continue the systematic execution of the Boost strategic program.

"For us, 2023 is about bridging the short-term slowdown and seizing long-term opportunities."

Lisa Pataki

CFO of the Comet Group

Capitalizing on market opportunities in all divisions

PCT – Commercialization of Synertia®, capacity expansion for next upswing. In light of the long-term structural demand in the semiconductor market, the focus of the Plasma Control Technologies division in 2023 will be on adapting nimbly to changes in demand from its customers. The task at hand for PCT is to further optimize production capacity, quality and delivery times. With a view to the next upswing and continuous efficiency improvements, Comet will carry out the announced expansion of its production in Penang, Malaysia, and consolidate its four individual sites in San Jose, California, under one roof for greater efficiency and collaboration. The new Synertia® RF power platform points the way to a new future for plasma process control in the semiconductor industry. Following its successful launch, the goal in 2023 is to respond to the high level of interest from customers by bringing to market and commercializing additional variants as quickly as possible. The same applies to the freshly launched 3rd-generation match controller.

IXS – Creating value for customers through artificial intelligence. The focus of the X-Ray Systems division is on raising the productivity of its customers with solutions that enable data-driven insights and automated analysis in quality inspection. To do so, it will expand its software and service offerings by inspection workflows and drive its transformation into an even more focused and market-driven company. Building on the successes of the past two years, the objective is to expand the collaboration with leading manufacturers in IXS focus markets, especially in the semiconductor industry, and to broaden the range of solutions for these applications.

IXM – Exploiting the market potential in non-destructive inspection and further advancing into new applications. The X-Ray Modules division has successfully positioned itself in new applications in the last two years, such as in the inspection of batteries and semiconductor & electronics components and in high-end computed tomography, by expanding its product portfolio with the award-winning MesoFocus tube and other innovations. The aim is to continue on this path while keeping careful control of the supply chain, and thus seize the opportunities in the volume markets.



Comet marks 75 years in business

**75 years exploring for
better.**



Comet marks 75 years in business

Comet through the eyes of fellow travelers.

Watch the video

Comet looks back on 75 years of history this year. Some of its long-time fellow travelers in the business world talk about the past shared with Comet – and what they expect from the company in the future.

Upon its founding in 1948, Comet employed six people in Bern-Liebefeld: a designer, a technical draftsman, a mechanic, two lathe operators and an office worker. Seventy-five years later, more than 1,700 employees from many nations work for Comet around the world. Over 500 of them are based at today's headquarters in Flamatt. This is a scale that is economically and socially relevant in a small Swiss canton like Fribourg.

"Comet is a popular employer for graduates of our universities and technology institutes."

Jerry Krattiger

Director of Economic Development,
Canton of Fribourg, Switzerland



Jerry Krattiger, Director of Economic Development for the canton of Fribourg, says Comet plays a "significant role" in the canton: "We don't have many publicly traded companies here with over 500 local employees." He says Comet has an impact on the canton's labor market in

"With MesoFocus, Comet has pushed the boundaries of x-ray technology."

Lennart Schulenberg
Managing Director,
VisiConsult, Germany

"In recent years, we have deepened our collaboration and expanded it into a systems partnership."

Stefan Dörig
Chief Technology Officer,
KUK Group, Switzerland

particular: "Comet is a popular employer for graduates of our universities and technology institutes."

Expanding boundaries through innovations

What has not changed in 75 years at Comet is its focus on innovation, technology leadership and niche markets. Even at the company's founding in 1948, Comet's view was that a small company can only survive with highly specialized products. One of its early innovations in the 1950s was DENTIX, an x-ray tube for dentistry, which was later further developed together with the Swiss Federal Institute of Technology in Zurich. Also emblematic of Comet's innovative spirit is the 600 kilovolt x-ray tube, for which development began in 2006 ([Enlightening, or: The world's most powerful x-ray tube](#)). More than ten years passed before the product was ready for the market – which illustrates that most successful innovations are not created overnight and through curiosity and expertise alone, but also require perseverance and persistence. It was only through the combination of all these ingredients that the world's most powerful x-ray tube was created.

And what about today? One evening in November 2022, the canton of Fribourg honored its most inventive companies with the Fribourg Innovation Award. The award in the "Established Company" category went to Comet, which had won over the jury with its MesoFocus x-ray technology. The technology allows manufacturers of electric-vehicle batteries to inspect them for quality and identify faults in the production chain. It impressed not only the jury, but also Comet's long-standing customers, such as Lennart Schulenberg, Managing Director of Germany's VisiConsult. "No one thought there was room to push the boundaries of x-ray technology like this – but with MesoFocus, Comet has done just that." With the curiosity and drive to explore new frontiers that such feats attest to, Comet will continue to be a leader in the semiconductor and electronics industry.

Side by side through history

Just like innovative strength and technology leadership, business and strategic partnerships run through Comet's history. This common thread was there from the beginning, when founder Gerhard Steck succeeded in inspiring investors with his ideas and raised 750,000 Swiss francs in start-up capital. A few years later, Comet became the worldwide representative of the American x-ray tube manufacturer Machlett Ltd., under whose license it manufactured rotating anode x-ray tubes for almost 40 years, while building up the know-how in x-ray technologies that still characterizes Comet today.

Another example of successful partnerships: In the early 1990s, Vakuum-Kondensatoren AG (VC), now Comet's Plasma Control Technologies division, was able to break into the semiconductor market together with one of the world's leading semiconductor equipment manufacturers from Silicon Valley ([From the Iron Curtain to Silicon Valley](#)).

Later, mutually respectful partnerships were the basis for the entry by Comet's Plasma Control Technologies division into the production of impedance matching networks (or matches) and radio frequency generators through two forward integrations, and for its becoming the Group's largest division ([Synertia® – more than an innovative product](#)).

"I have absolute confidence in Comet's market position and prospects."

Martin Lehmann

CEO and Fund Manager of
3V Asset Management AG,
Switzerland

The example of the KUK Group from Appenzell, Switzerland, shows how such partnerships can develop. KUK, which has been supplying transformers and coils to Comet since 2014, recently purchased an x-ray system from Comet for its own quality assurance. So this supplier is also a customer, but not only that: Stefan Dörig, CTO of the KUK Group, says: "In recent years, we have deepened our collaboration and expanded it into a systems partnership." In the future, we will assemble modules for Comet."

Prepared for the future

Speaking of the future: What may it have in store for Comet? One person who gives this question intense thought is Martin Lehmann, CEO and Fund Manager of 3V Asset Management AG, Switzerland. Since 2008, Comet has been "a significant position" in its equity fund. In 1996, to go public, Comet ventured onto the small Berne Telephone Exchange, later moving to the SIX Swiss Exchange on December 17, 2002. Since then, the value of Comet's stock has multiplied from the entry price of just under 20 Swiss francs per share. "I have absolute confidence in Comet's market position and prospects," says Lehmann. In the end markets where Comet operates, he believes, megatrends are emerging that will provide a strong boost to business: "Autonomous driving, Internet of Things, general digitalization."

How Comet has explored for a better future.



Highlights of our history.



Read more



From the Iron Curtain to Silicon Valley.



Read more



Enlightening, or: The world's most powerful x-ray tube.



Read more

75 years in business

Highlights of our history

Born from necessity 75 years ago, Comet has grown into a world-leading technology firm in the x-ray and radio frequency power space.

Discover further milestones in the Comet history



1948

Switzerland waits in vain for industrial goods from its neighboring countries, which are busy rebuilding their economies after the Second World War. The Swiss need to do their own manufacturing. Thus it is that on February 19, 1948, a group of investors led by Gerhard Steck of Bern founds the stock corporation Comet (Company for Electronic Tubes), at Bern's Hotel Schweizerhof. The company's purpose is to develop and produce x-ray tubes for medical and industrial use.

1950

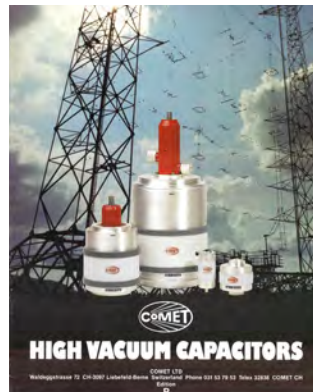
1952

1956

1954

1965

As sales in the x-ray tube business fluctuate, a second revenue pillar is needed: Comet establishes Vakuum-Kondensatoren AG, which builds vacuum capacitors for broadcast and industrial transmitters.



1966

1971

1973

2009

2011

2007

Through the acquisition of Hamburg-based Yxlon International Comet becomes the global market leader in products for non-destructive testing, doubles its sales to CHF 200 million and now employs more than 600 people. Yxlon's roots go back to the discovery of x-rays by Wilhelm Conrad Röntgen in 1895 and the construction of the first x-ray tube by Carl Heinrich Florenz Müller in Hamburg in 1896.



2015

2017

2006

2004

2002



2020

Already, more than 70% of the world's RF power and x-ray products for the semiconductor industry are deployed in Asia, a growth region. Comet opens a production site in Penang, Malaysia, its second in Asia (the first was established back in 2003 in Shanghai, China). The Penang factory builds radio frequency impedance matching networks (also known as RF matches) – a business that sees powerful growth amid the outbreak of the COVID-19 pandemic and the acceleration of digitalization.

1998

1996

1994

2021

2022

1992

1989

Houston, we have no problem! Comet's x-ray tubes work even in space. In a world first, Comet sends an x-ray tube into orbit around Earth as part of a metallurgical experiment during the German-US Spacelab D1 space mission.

1983



...

to be
continued

75 years in business – How Comet is exploring for better

From the Iron Curtain to Silicon Valley.

When the Iron Curtain falls in 1989, Vakuum-Kondensatoren AG in Bern-Liebefeld, the precursor of the Plasma Control Technologies division, loses its main customer segment and must reinvent itself. The pivotal realignment takes the company to the semiconductor industry in Silicon Valley.



The vast Wertachtal shortwave radio transmitter center near Munich is used by foreign radio stations during the Cold War – many of them Comet's customers. (Image: Wikimedia Commons, User: Zonk43).

From a distance, the Wertachtal shortwave transmitter facility looks like a space station on a faraway planet. Especially at night, when giant floodlights illuminate the steel lattice towers, up to 127 meters high, that support the cable nets for the antennas. A sight reminiscent of a Star Wars movie.

Radio with a political mission

It is 1989 and the world is still in the Cold War, in which the Wertachtal shortwave transmitter plays an important role on the ideological front. Its 25 antennas are powerful enough to reach the whole world, and especially the countries of the Eastern Bloc. Western broadcasters, such as Deutsche Welle and the American stations Radio Free Europe and Voice of America, take advantage of this, pitching their messages of freedom and prosperity from Wertachtal to the region behind the Iron Curtain. And right at the heart of it all in the Wertachtal facility are components from Comet, whose subsidiary, Vakuum-Kondensatoren AG (VC), supplies radio stations all over the world with high-performance capacitors and specialty parts. The Wertachtal transmitter center is one of its most important customers.

World market leader in large capacitors

In 1965, Comet founds the capacitor maker Vakuum-Kondensatoren AG (VC) to balance out the fluctuating sales in the x-ray sector. In time, the subsidiary will grow into the world market leader in the manufacture of large capacitors. By the end of the 1980s, VC is manufacturing and selling capacitors with power ratings of several hundred kilowatts to customers such as ABB (Switzerland), AEG (Germany), Marconi (England) and Continental Electronics (USA). Business is so good that VC outgrows its premises. In 1989 it moves to a larger site and by the end of the year will have achieved record sales of over six million Swiss francs. But by then, the world is already a different place.



Fall of the Berlin Wall, 1989 (Image: Wikimedia Commons, User: Superikonsoskop)

The fall of the Berlin Wall is a turning point for Comet, too

On November 9, 1989, the Berlin Wall opens and thus becomes irrelevant overnight, paving the way for the end of the Cold War. As a result, the shortwave transmitter in the Wertach Valley loses its political significance. Nearly all stations that have been broadcasting from it scale back or cease operations altogether over the next few years, until the facility is finally demolished in 2014. For Comet's subsidiary VC, the new geopolitical situation means a severe slump in business; the boom of the 1980s is followed by difficult times, requiring measures such as short-time working. VC is only able to stay afloat thanks to its – low-margin – industrial business. If the company is to make money with vacuum capacitors in the future, it urgently needs to develop new markets. A strategic pivot is in order. The new big target market is the USA.

Second attempt at the US market

In the past, Comet has not been able to gain a real foothold in the USA. "The American market was very price-driven even back then," recalls electrical engineer Walter Bigler, "so we couldn't compete in the volume business with our more expensive top-end products." VC's capacitors often cost twice as much as those of its US competitors. The fact that they are also up to five times more durable appears to be secondary – for the time being.



About Walter Bigler

For Walter Bigler, a young electrical engineer, the turbulent period in geopolitics at the end of the 1980s is also one of great personal change. After ten years at Vakuum-Kondensatoren AG (VC), a division of the subsidiary Comet Technik AG, he is actually intending to move on. But an offer from management to make him VC's head of engineering is too good to turn down. Bigler will remain with the company for more than 40 years. He retires in 2021, but keeps in touch with Comet as a member of its 10-year seniority club.

Now, a new opportunity presents itself. As luck would have it, Machlett Laboratories is sold to Varian in the very year that the Berlin Wall comes down. Since 1954, Comet has been producing x-ray tubes under license from Machlett. Now the license agreement expires and Comet is allowed to establish its own subsidiary in the USA, which opens in Norwalk, Connecticut, in 1989. In the future, not only will the US x-ray tube business be looked after from here, but a second push to market vacuum capacitors will be made from the base in Norwalk. The recipe for success on which Comet's hopes ride is customer proximity.

Onward to Silicon Valley

In 1991, Comet is approached by a company from Silicon Valley. This firm specializes in plant engineering and dry etching for the semiconductor industry, whose microchips form the heart of every computer. In the past, the company, which today is one of the world's leading equipment suppliers to the semiconductor industry, repeatedly experienced failures of its equipment at end customers. The reason almost always lay in defective vacuum capacitors – the partly etched wafers would then be worthless, causing significant financial loss. That is why the Silicon Valley company is searching for high-quality, absolutely reliable capacitors – which it finds at Comet.

In 1992, after a test phase of several months, the time has come. The two companies enter into "demanding but fair negotiations," as Walter Bigler recollects. "They wanted to know how fast we can grow, how flexible we are, how we are in terms of service, delivery times, delivery readiness level, and consulting." In short, the customer wants Comet to be a true partner that can do more than "just" build the best capacitors in the world. In return, it fully relies on Comet's high quality: For example, from now on, this customer will require anyone who wants to supply it with impedance matching networks (also known as matches) to buy the vacuum capacitors for these from Comet.

The move into the semiconductor equipment market

The Silicon Valley customer spurs Comet into entering a new era. The semiconductor industry demands a dynamism and flexibility of VC that was previously almost unheard of in Bern-Liebefeld. Within little time, it must metamorphose into a cutting-edge technology firm. It has the right technology, quality and products – but developing the necessary new mindset takes some adjustment. "Above all, we had to work on agility and speed in handling customer requests," says Walter Bigler. And then there is the language: The new key account has so profound an impact on the Swiss company that English becomes the second official language at VC.

In 2000, Vakuum-Kondensatoren AG, with 120 employees, has sales of about 30 million Swiss francs – and is already planning its next strategic advance: a forward integration, by manufacturing the matches itself for which it has so far supplied the capacitors. Thanks to its entry into the semiconductor market, VC has evolved into today's Plasma Control Technologies division, whose radio frequency technology enables the production of components like microchips and touchscreens – a high-value business.

In every respect, it's a good thing the Berlin Wall fell.

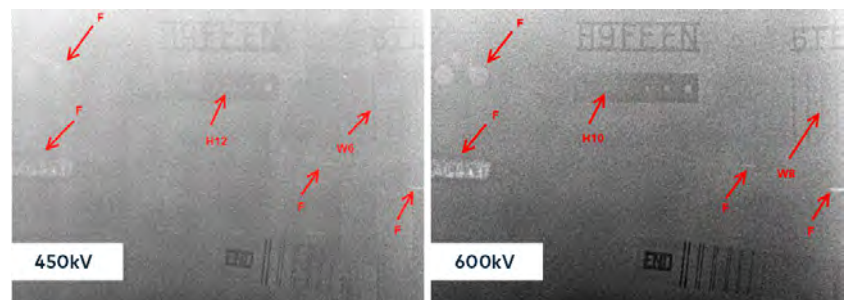
Enlightening, or: The world's most powerful x-ray tube.

By developing the 600 kV x-ray tube, Comet blazed a trail where no one had gone before. The path to success was long and rocky.

"Comet achieves breakthrough in x-ray technology," proclaims the headline of the Swiss business newspaper "Finanz und Wirtschaft" on October 15, 2011. The groundbreaking innovation reconciles extremes of large and small: Even relatively huge objects can be x-rayed in minute detail thanks to this Comet technology. In the words of the newspaper: "Structures barely thicker than a human hair can be recognized in components that are several square meters in size." Making this possible is the 600 kilovolt x-ray source that enables three-dimensional imaging in stunning resolution.

This technological breakthrough almost eluded Comet. Let's take a look back at its origin. In 2006, the company's X-Ray Tubes department, now the Industrial X-Ray Modules division (IXM), has to acknowledge that its most powerful tubes, those with an operating voltage of 450 kilovolts (kV), no longer meet the needs of numerous customers. They now require stronger tubes that allow even larger products and denser materials to be inspected in little time – for example, to screen steel shipping containers at customs, or for non-destructive inspection of high-absorbing turbine blades in aircraft engines. The mission for the R&D department is clear: A new x-ray tube with 600 kilovolts of power is needed!

The task is formidable: How can 600 kV – that is 600,000 volts, or 40 times the voltage of a suburban railroad overhead line – be reliably insulated in a 35-centimeter-long metal-ceramic tube for several thousand hours of operation? So far, no one has managed to do this. The developers at the X-Ray Tubes department get to work.



A ten-centimeter-thick steel layer is irradiated for four minutes, first with a 450 kV x-ray tube (left), then with a 600 kV tube (right). The 600 kV model provides a much more detailed image (Bavendiek, Heike, Kosanetzky et al: "Best Energy Selection for Different Applications with DDAs – from 20 keV to 600 keV", 2011).



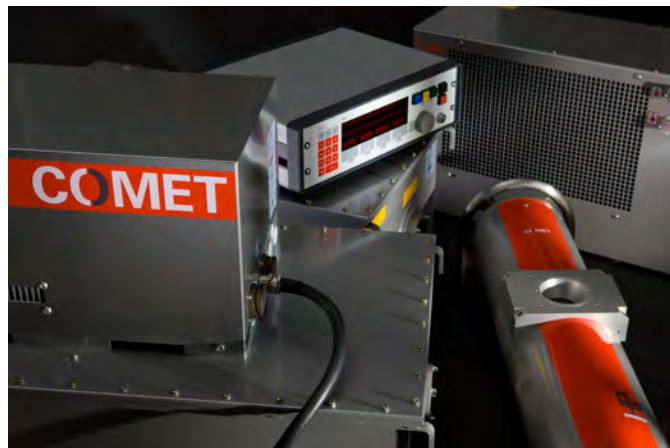
About Adrian Riedo

Mechanical engineer Adrian Riedo has worked at Comet for over 25 years, first as R&D Project Manager, then as Head of R&D for X-Ray Tubes, later as a Technology Specialist, and, since 2020, as Director of the Technology Group at IXM. He embodies the spirit of the many long-time employees at Comet and is the president of the 10-year seniority club. His latest landmark achievement: the invention of the MesoFocus tube technology.

Try tungsten

Soon, however, it also becomes clear to the project team in Flamatt why no competitor has yet ventured to develop a 600 kV x-ray tube. The first challenge: The x-ray source needs a generator that is able to produce an operating voltage of this level in the first place. Such a generator does not exist on the market, which means Comet's development work is doubled at a stroke.

Another difficulty: At 600 kV of operating voltage, the radiation cannot be shielded by a lead covering as in conventional x-ray tubes, because it would be much too thick and heavy. Instead, the developers use a tungsten alloy in the anode. The chemical element, which is highly absorbent of x-rays, is designed to block the radiation where it is generated. However, this approach too comes with challenges. Adrian Riedo, the head of R&D and project manager at the time, remembers the dedicated development team working through the weekends to find solutions during this "hot phase".



The complete system: generator, controller, cooler, and 600 kV tube

The hard work and perseverance pay off. In the fall of 2011, Comet can declare victory: The 600 kV x-ray tube is ready for the market – and immediately finds buyers worldwide. A Chinese customer uses it to test ceramic tiles for aerospace applications, and a little later a customer from the USA orders ten modules at once – tube, high-voltage generator, controller and cooler – for several hundred thousand Swiss francs.

**About Christoph Walther**

Christoph Walther is a physicist and has been with Comet for more than 11 years. As one of his early responsibilities at Comet, he was assigned to lead the task force to optimize the 600 kV tube. In 2014, Walther, who wrote his doctoral thesis on terahertz quantum cascade lasers at ETH Zurich, became Director of R&D, X-Ray Tubes.

A task force is needed

Now that demand is gaining momentum, new challenges suddenly emerge: Product defects and "teething problems" arising in use must be corrected in order to satisfy Comet's own standards and those of its customers. It's nothing unusual in innovations, but reason enough for immediate action.

In 2013, a twelve-member task force led by the physicist Christoph Walther tackles the technological problems. Soon the team discovers one of the causes of the issues: As a result of the ceramic insulation, the electrical charges inside the tube cannot dissipate, which causes disruptive discharges and flashovers. Together with suppliers from the USA and Comet manufacturing engineers, Walther and his team develop a novel, ultra-thin coating of chromium oxide that allows the charge to dissipate. "The new coating is as conductive as necessary and as insulating as possible," Walther says. "The difficulty was finding the right balance." In 2017, the chromium oxide coating will become standard on all Comet x-ray tubes from 320 kV on up. From then on, production scrap is significantly reduced.

Richer by important experience

Since its market launch in 2011, Comet has sold over one hundred of the 600 kV modules. Although this does not make the world's most powerful x-ray tube a bestseller, its luminosity is nevertheless of considerable significance for Comet's history.

First of all, the 600 kV x-ray tube has underscored Comet's claim to global technology leadership. Second, the project drove the developers to overcome ever new challenges for more than ten years, until the ultimate success. During the development process, Comet discovered technologies whose benefits go far beyond the original product, such as the chromium oxide coating. And finally, it established new standards and processes, like the creation of a testing team that puts new products through their paces. All of which goes to show that the 600 kV x-ray tube is more than just an impressive piece of technology – its genesis gave Comet valuable insights to take forward.

A woman with short, wavy brown hair, wearing a dark blazer and a patterned scarf, is shown from the chest up. She is looking slightly to the right of the camera. In the background, there is a large, complex piece of scientific equipment, likely an X-ray diffractometer, with various cables and components visible.

Trends & Technologies – Expert view

X-ray 4.0: Analyzing nanostructures in real time.

Watch the video



About Antonia Neels

Antonia Neels is Head of the Center for X-Ray Analytics at the Swiss Federal Laboratories for Materials Science and Technology (Empa) and Titular Professor at the University of Fribourg. She grew up in the former East Germany, where she graduated from university with top marks in chemistry shortly after the fall of the Wall. At school, she had chosen French as her second foreign language after Russian. A lucky choice, as otherwise, she would hardly have accepted the doctoral position in x-ray crystallography at the University of Neuchâtel in 1991. Since then, Antonia Neels has been living in Switzerland – now with her husband and two grown-up sons.

As Head of the Center for X-Ray Analytics at Empa, the Swiss Federal Laboratories for Materials Science and Technology, Antonia Neels is developing new methods of x-ray analysis. The focus is on imaging techniques for dynamic processes in the nanometer range. These are particularly groundbreaking for the life sciences, where they facilitate a greater understanding of the interactions between materials and humans.

If Antonia Neels had to pick one item that has shaped her professional career, it would be a crystal. "Crystals don't just look beautiful, they can also tell us a lot," she says. Since her research as a PhD student at the University of Neuchâtel more than 30 years ago, she has been involved in x-ray crystallography, a technique for the three-dimensional structural analysis of crystals, crystalline structures (such as silicon) and other types of molecules.

Today, Antonia Neels is head of the Center for X-Ray Analytics at the Swiss Federal Laboratories for Materials Science and Technology ([Empa](#)), and she is still fascinated by the "inner workings" of materials. "Curiosity doesn't get old," she says. Fortunately, one might add. That's because the applied research that Neels and 17 other scientists are doing at the Center for X-Ray Analytics is more important than ever for helping to tackle big issues of the future. In effect, x-ray analysis provides the necessary materials knowledge to develop technologies and materials that can make life healthier, safer, more convenient and sustainable.

More effective medicines for an aging society? More efficient batteries for electromobility? More sustainable building materials for CO₂ reduction? Smaller microchips for a more digital world? All of this requires a sound knowledge of the molecular structure of materials. "X-ray diffraction and scattering combined with three-dimensional x-ray imaging are ideal for studying materials for their behavior (such as their ductility) and potential defects and then improving them," says Anto-

"Today, x-ray analysis is one of the most important methodological bases for the development of new materials."

nia Neels. "Today, x-ray analysis is one of the most important methodological basis for the development of new materials."



It all comes down to methodology

The further development of these foundational methodologies is the central focus of Empa's Center for X-Ray Analytics. Here at the Center, combining different x-ray techniques has helped Empa's research team and numerous industrial partners to analyse ever smaller structures and even observe dynamic processes in real time. In addition to a great deal of know-how, technological progress is also key: more precise detectors, more powerful x-ray equipment, faster processors, better software for data analysis. "Thirty years ago, I wouldn't have dreamed that we would someday be able to see and analyze molecular interactions in real time," Antonia Neels marvels. During her time as a doctoral student, it would take her up to five days to complete one crystal structure analysis. This is another reason why Neels soon became interested not only in crystals and other materials, but also in the methodology for studying them.

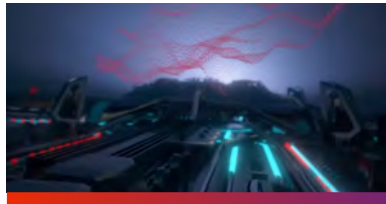
It was this interest that in 2008 led the native of Berlin, Germany, to the Centre Suisse d'Electronique et de Microtechnique (CSEM) in Neuchâtel – a defining career move away from basic academic research and toward applied materials research. Under Professor Alex Dommann, she set up an x-ray laboratory at CSEM to non-destructively examine and test defects and stresses in semiconductor materials and devices – for example, in pressure sensors. In 2014, with a similar mission, she took over as head of Empa's Center for X-Ray Analytics. With scientists from various disciplines, she developed a lab that combines methods of x-ray diffraction and scattering with high-resolution imaging techniques, making it unique in Europe today.

Humans and materials

Especially for the semiconductor industry, where non-destructive methods of investigating crystal structures like silicon are crucial, this combination of techniques makes sense. "Crystallography for evaluating strains and defects in combination with morphology, i.e., with the visualization of possible voids and cracks, holds great potential for a better understanding of the processes in semiconductor materials and devices," says Antonia Neels.

A core interest of the Center for X-ray Analytics is related to the life sciences, a field where it continually explores the interface between humans and materials. For example, when active pharmaceutical compounds encounter human cells, this results in molecular reactions, or biodynamic processes. In clinical trials, investigators want to understand how and where exactly an active ingredient works. And it is precisely here – in the observation of dynamic processes on the nanometer scale and in real time – that modern x-ray analysis develops its full potential.

How Comet is exploring for a better future.



Technologies at the heart of critical manufacturing processes.

[Read more](#)



Synertia® – more than an innovative product.

[Read more](#)



X-ray: an up-and-coming technology in the semiconductor industry.

[Read more](#)



Ready for new challenges with an expanded product portfolio.

[Read more](#)

Technologies at the heart of critical manufacturing processes.

Watch the video

Technology is evolving rapidly, and with each generation, the pace accelerates.

Exciting developments such as artificial intelligence (AI) drive growing demand for Comet solutions – we enable the manufacturing of essential building blocks of the digital world.

Radio frequency (RF) power technology

In recent years, technological advances such as the Internet of Things, big data and high-performance computing have greatly increased the need for computing power. Devices are becoming ever smaller, even as they must handle vastly more data. That means the electronics inside need to be more and more precise, reliable and powerful. Comet's high-quality RF match networks, vacuum capacitors and RF generators are vital to the core process of microchip production, as they help to precisely control the activity in the plasma chamber.

X-ray

Everywhere in the electronics, automotive and aerospace industries, components and parts are becoming progressively smaller, lighter and more complex. Yet they must function absolutely reliably, especially in safety-sensitive applications such as vehicles. This can be assured through rigorous quality inspection using x-rays. With its innovative, premium-quality x-ray sources and systems, as well as services that are increasingly based on data analysis and AI, Comet is making an important contribution to a safer world.

Our plasma control and x-ray technologies are used in critical production processes.

To find out where specifically, watch this short video.



Synertia® – more than an innovative product.

The trend is inexorable: Microchip structures keep becoming smaller and more complex. For chip manufacturing, this means plasma processes must become ever more precise, reliable and quicker to control. This requires more than a single innovative product: What it demands of Comet Plasma Control Technologies is the ability to support customers in innovating, optimizing, and problem-solving through all stages of collaboration.



"It's not just about the product. Above all, it's about helping customers innovate and solve their problems."

André Grede

Vice President of Global R&D,
Plasma Control Technologies,
Flamatt, Switzerland

Important steps in semiconductor fabrication, such as the deposition, modification and patterning of a wide variety of materials on wafers, are performed with the aid of plasma. Comet radio frequency technology provides the energy needed to control these plasma processes (also see the video "[How are microchips built](#)"). At the product level, Comet thus far developed and built the impedance matching networks (so-called matches) and vacuum capacitors necessary for this. Then, in July 2022, after five years of development work, we launched our first complete radio frequency platform for real-time control of plasma processes – in a word, "Synertia®".

The Synertia® platform: a networked RF ecosystem

"To succeed in the future, it won't be enough to offer a good RF generator, a good matching network or good vacuum capacitors," says André Grede, Vice President of Global R&D at Comet Plasma Control Technologies. "Remaining the technology and market leader for these products is of course still our number one goal. However, superior performance of the entire RF system can only be achieved if these individual products are not just optimally matched but also communicate with each other in real time."

The name "Synertia®" is derived from "synergy", as the new Synertia platform is a complete ecosystem of RF products that, as a system, provides more benefit than the sum of the products it contains. This modular product portfolio will grow steadily in the coming years. Among other additions, the first Synertia matching networks are to be launched this year.



"Virtually networked, what we have is one single, global smartLAB. This also takes international collaboration within the global R&D team to the next level."

Nikolai Schwerg

Director Global Digitalization,
Plasma Control Technologies,
Flamatt, Switzerland

Access to experts anywhere, anytime

Comet's Synertia platform enables real-time insight into plasma processes at a whole new level. Critical problems and challenges can thus be solved more quickly, both for manufacturers of semiconductor tools and for end customers in chip production. This not only saves them time and money but also enables them to bring new products to market more quickly. "Research and development in our business is not just about the product. Above all, it's about helping customers innovate and solve their problems – at an ever-rising level of complexity," notes André Grede. "That's why the team behind product development and the support it provides are especially important to our customers."

In recent years, Comet has built a global, multidisciplinary team of specialists in many areas of technology. The various locations all over the world enable us to support our customers around the clock and, if needed, on site. "In this way, we are not only delivering an innovative product, but also efficient support in all stages of collaboration with our customers," continues André Grede.



Comet SmartLab in Flamatt

Powerful, networked RF smartLABs around the world

To develop innovative high-tech products, it takes both the right team, and the right work environment with high-end infrastructure. The first Comet Plasma Control Technologies smartLAB was opened in Flamatt at the beginning of 2018. Later, a smartLAB was added in Aachen, Germany, and another is currently being set up in San Jose, California, as part of the new building there. "PCT's fully digital Synertia® product platform internally handles data streams of up to 30 gigabits per second. The volumes of data generated during testing of complete power delivery systems are challenging to store, organize and process. Local smartLABs allow these large volumes of data generated during development to be analyzed right where they are recorded," says Nikolai Schwerg, Director of Global Digitalization, Plasma Control Technologies. "And virtually networked, what we have is one single, global smartLAB. This also takes international collaboration within the global R&D team to the next level." In the digitalized lab environment, test runs can be automated, large amounts of data analyzed, and new functionalities qualified more quickly. This allows the further improve-

ment and adaptation of products to customer requirements in the shortest possible time.

For more efficiency and sustainability in semiconductor production

Energy is a scarce resource, and the fabrication of wafers is very energy-intensive. That makes efficiency in this regard a very important consideration when it comes to product innovations in the Plasma Control Technologies division. In plasma control, energy that is not transformed into radio frequency power normally exits as heat. This energy is wasted and the heat then must be countered by cooling. "The Synertia® platform requires less cooling and less space in fab cleanrooms than other RF subsystems. Both of these factors contribute to greater efficiency and sustainability," says André Grede.

"When it comes to our Synertia® generator, our customers describe it as a truly innovative machine."

X-ray: an up-and-coming technology in the semiconductor industry.

Microchips are the key building blocks of our digital world. To meet the growing demand for technologies such as electromobility, autonomous driving, artificial intelligence, cloud computing and 5G-enabled smartphones, more and more powerful chips are needed. This brings with it various technological challenges – and new opportunities in the semiconductor industry for Comet x-ray technology.

Until now, producing ever more powerful microchips has mainly meant ever smaller microchip structures, with progressively more transistors on the same area of silicon. However, for structures in the nanometer range – and probably into the sub-nanometer realm from 2030 – the technology will reach physical limits in the foreseeable future.



"Non-destructive inspection technologies are the future."

Isabella Drolz

Vice President of Product Marketing, Comet Yxlon, Hamburg, Germany

Another way to pack more performance into a smaller area is to use the third dimension, stacking the individual chips on top of each other in a so-called advanced package. The benefits are compelling: The short distances between the individual chip components allow higher data processing speeds combined with lower energy consumption. Advanced packages have been on the market for years, but producing them was not very attractive for manufacturers. That has changed. Tools, procedures and testing processes are being created to make manufacturing processes more stable and cost-effective. This opens up new opportunities for Comet's X-Ray Systems and X-Ray Modules divisions.

High future potential in x-ray inspection

The production of advanced packages requires a new level of process control and thus of inspection. This begins in the development stages and continues through to series production. "Inspection technologies for this must do three key things," says Isabella Drolz, Vice President of Product Marketing at Comet Yxlon. "They must find critical defects, be fast, and provide actionable information about the product and process."

In the advanced packaging field, two inspection technologies in particular have become established in the past: optical inspection, and inspection using a focused ion beam electron microscope (FIB-SEM). FIB-SEMs provide ground-truthing (i.e., confirmatory or reference data) and can detect nanoscale defects, but the method destroys the package and is very time-consuming. Optical inspection is very fast and non-destructive, but has limits in finding critical defects below 100 micrometers and in complex 3D structures.

This is where x-ray comes in as an accelerator for shorter time-to-market and higher yields. "Until recently, x-ray received little attention in the semiconductor industry because the technology simply wasn't



"Interest from potential new customers in the semiconductor industry has definitely increased recently."

Karen Li

Asia-Pacific Region General
Manager IXM, Shanghai, China

ready yet. It was too slow and the resolution was not high enough," says Isabella Drolz. "The 2.5D x-ray inspection technology that we have evolved to the next level with intelligent data processing now enables quick and easy analysis of critical defects in minutes." Our latest x-ray technology finds critical flaws in a range below 100 micrometers down to the nanometer scale, at an acceptable speed. It is non-destructive and, thanks to automated defect recognition, it gives our customers information within a few minutes that they can use to improve their processes. For Isabella Drolz, the conclusion is obvious: "Non-destructive inspection technologies are the future."

Growing interest from customers in Asia

Most microchip manufacturing takes place in Asia. "In the electronics industry, our x-ray solutions are already well known, especially for battery testing and in the surface-mount technology segment," says Karen Li, Asia-Pacific Region General Manager, X-Ray Modules. "But interest from potential new customers in the semiconductor industry has definitely increased recently. For us, it's about listening to them and really understanding their needs."

The X-Ray Modules division further expanded its presence in Asia in 2022 to be even closer to customers. "We work very closely together regionally here and our customers benefit from the quick and flexible support by the different teams at the locations in Asia," explains Karen Li. Comet is thus well positioned in Asia and globally to tap unused and future potential for applying x-ray technology.

Ready for new challenges with an expanded product portfolio.

Comet reached important milestones in 2022 in expanding its product and service offering for the semiconductor and electronics market. It gained a foothold in the battery market and expanded its range of software solutions.

X-Ray Systems (IXS)

The IXS division in 2022 continued its redesign for greater standardization, modularity, and more efficient production processes.



UX50

The versatile CT system with advanced software features

With the launch of the powerful UX50 CT system in February 2022, IXS has added an all-rounder to its product line-up for the inspection of large, dense components, such as castings for the automotive industry. The Gemini cross-system software platform makes it quick and easy for operators with different levels of expertise to use advanced software features for field-of-view extensions, image enhancement, and artifact reduction.



UX20

Now also available with the MesoFocus 225 kV tube

The new release of the UX20 radiography system with CT functionality now also offers the 225 kilovolt MesoFocus tube as an option. The new tube's robust, sealed design and the long-life, filament-free emitter technology ensure maintenance-free operation, extremely high availability and more than 20,000 operating hours. The MesoFocus is therefore also the perfect radiation source for series testing.



Cougar EVO and Cheetah EVO

The compact solution for semiconductor and electronics inspection with evaluation workflows powered by deep learning

Ready for new challenges with an expanded product portfolio.

The system release 6.0 of the two microfocus systems Cheetah EVO and Cougar EVO for use in the semiconductor and electronics sector comes with significant innovations: The optional FXT 160.51 water-cooled x-ray tube ensures a stable focal spot through consistent heat dissipation, even during extended operation. The new dose monitoring with an alarm function offers additional protection for particularly radiation-sensitive electronic components containing silicon. The series of automated inspection processes based on ORS's Dragonfly software was expanded to include two additional variants.



FF20/35/85 CT

The FF CT product family for industrial laboratory applications

The FF CT product family consists of three high-resolution computed tomography systems for detailed laboratory analyses in the electronics, automotive and aerospace industries as well as in research and development. The FF20 CT and FF35 CT microfocus systems are specially designed for the inspection of small to medium-sized parts, primarily for the electronics sector. Thanks to SEMI certification, the FF35 CT SEMI is particularly suitable for analyses in the semiconductor industry. The FF85 CT is the most flexible high-resolution CT system of its generation. It can be equipped with a flat-panel detector and the IXS line detector CTScan 3. In addition, dual microfocus and minifocus tube configurations are available, as well as (since the latest release) the tube combination of MesoFocus 450 kV and minifocus.

VistaX packages

Software tools for optimal detail resolution, high speed and productivity

In addition to outstanding inspection results combined with simple operation, the key criteria for CT users in particular are speed and productivity. IXS has bundled its outstanding software features into packages that customers can select according to their individual requirements.

X-Ray Modules (IXM)

In 2022 the IXM division took advantage of the trend toward miniaturization, which is becoming increasingly important in the growing markets of electronics and battery inspection and additive manufacturing.



MesoFocus 450kV

The award-winning inspection technology for additive manufacturing and batteries

The latest x-ray module in the MesoFocus product series is specifically designed to resolve artifacts in the 30–200 micrometer range in large and dense additive components and other complex structures requiring reliable micro-failure detection.

The award-winning MesoFocus technology makes quality inspection more efficient in emerging applications, whether in-line, at-line or in the lab. Flexibility, stability, high throughput and ease of use are the key advantages.



FXE series

High-resolution modules responding to the growing customer demand for inspection of ever smaller parts

The FXE series is designed for non-destructive quality assurance, off-line inspection, and measurements of parts with defects in the low micrometer range.

The microfocus and nanofocus resolution x-ray modules allow clear feature recognition in electronics, notably in printed circuit board assemblies, ball grid arrays and integrated circuits, semiconductor packaging, micro-electromechanical systems, and battery cell inspection.



EVO 300D/1200

Portable x-ray system perfect for high-performance field inspection

Up to 30% savings in exposure time compared to traditional 300 kV portable solutions.

The newest module in the EVO series features a superior combination of 300 kV and 1200 W constant potential x-ray power for extreme performance – making it ideally suited for all high-performance field inspection jobs.

Plasma Control Technologies (PCT)

For the PCT division, 2022 was defined by the launch of its new Syntertia® product platform. But PCT also fielded innovations in vacuum capacitors and RF matches, such as offering more power in a smaller form factor.



Tetra-Con

Vacuum capacitors with higher voltage and capacitance in a compact size

High power is a key requirement especially for power-intensive etch applications. Comet therefore developed Tetra-Con, a new variable vacuum capacitor series, to reduce the footprint, allow efficient use of space in the matching network, and increase design flexibility.



Impedance matching networks

Improved performance of customized RF matches

Impedance matching networks, or matches, are highly customized power delivery subsystems that enable a wide variety of application-specific solutions deployed in leading-edge semiconductor plasma processes. Comet delivered many new designs in 2022 that provide superior performance in our customers' systems.



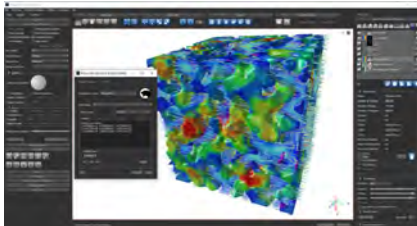
Synertia® RF power delivery platform

The new integrated platform enables the unprecedented power delivery control required by plasma process tools for the next generation of microchips.

Synertia® ensures powerful command and control of plasma conditions at highest speeds. The fully integrated system allows the complexities of next-generation memory and advanced logic to be managed across all atomic-scale plasma processes. The Synertia® platform consists of RF generators and RF matching networks with a wide range of frequencies and power levels. The first generator products were launched in 2022, with more frequencies and matching network solutions to follow soon.

Object Research Systems (ORS)

The focus of the ORS team in 2022 was on the further development of its well-known Dragonfly software.



Dragonfly

Advanced AI capabilities for post-processing, quantification, and 3D modeling for the analysis of scientific and industrial image data

ORS released two software versions of Dragonfly in 2022. The latest release featured deep learning refinements, pre-trained deep models, solid meshing for simulation workflows, as well as elastic registration tools to characterize the deformation of materials.

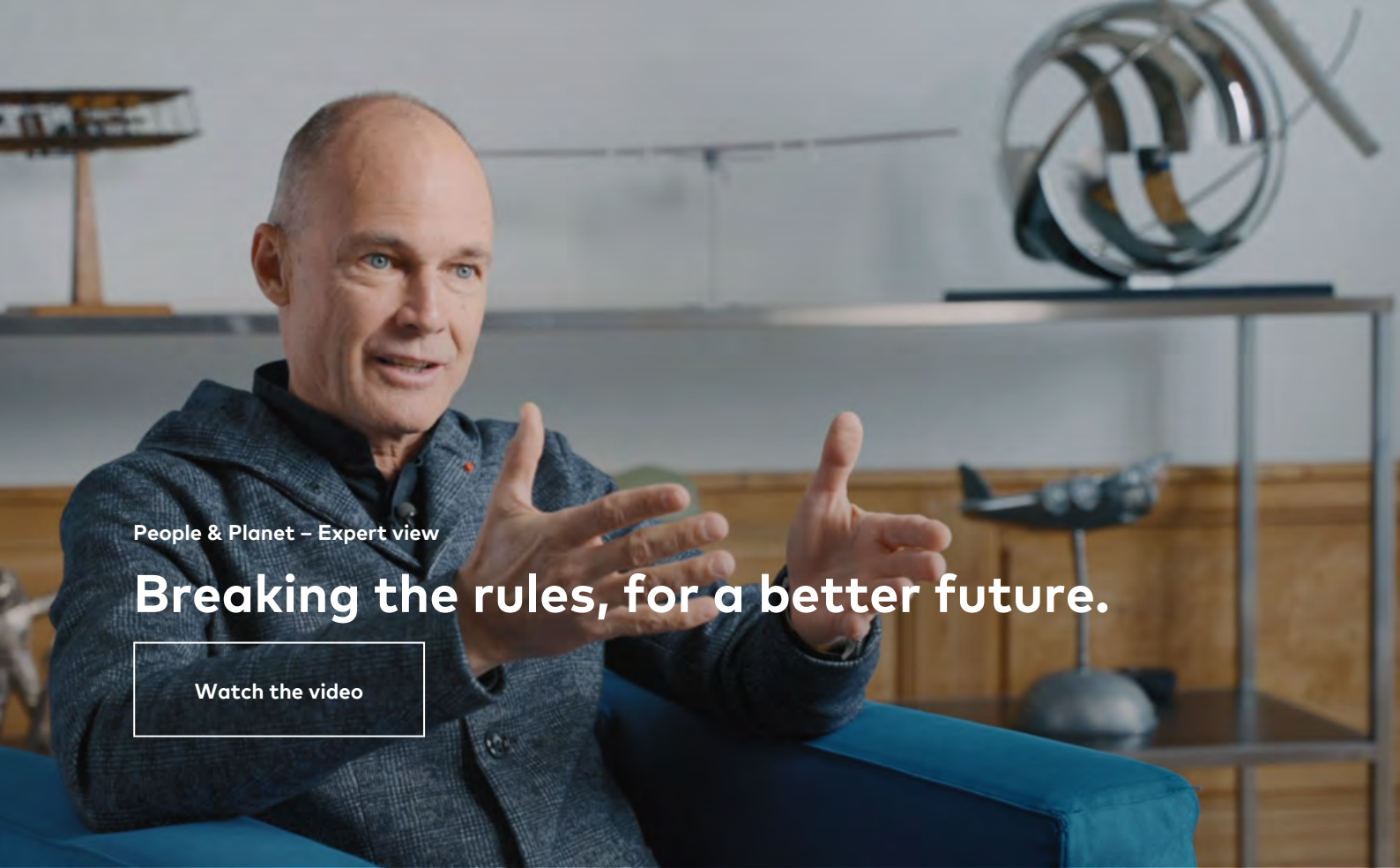
The other release includes the integration of NASA's Porous Microstructure Analysis (PuMA) software for performing material response simulations, new deep learning architectures for noise-to-void denoising, and many other new features.



Dragonfly Enterprise

Centralized visualization, computation, and data management

For large imaging centers and research facilities, ORS introduced its next-generation version of Dragonfly VizServer, which provides high-performance image processing from any device on enterprise networks. This offering for the Dragonfly Enterprise platform promotes collaboration among researchers, facilitates the management of large data and hardware resources, and reduces IT costs.



People & Planet – Expert view

Breaking the rules, for a better future.

Watch the video



About Bertrand Piccard

Bertrand Piccard is a psychiatrist and adventurer. Together with Brian Jones, in 1999 he became the first to fly around the planet in a balloon. In 2015 to 2016, with co-pilot André Borschberg, Piccard circumnavigated the world in a solar-powered airplane, the Solar Impulse. Bertrand Piccard has been married since 1989 to Michèle Piccard, with whom he has three grown daughters. His non-profit Solar Impulse Foundation has now identified and promoted 1,450 sustainable technologies and recognized them with the "Solar Impulse Efficient Solution" label.

On April 21, 2016, Bertrand Piccard is about to embark on perhaps his most daring exploit: a three-day non-stop flight leg across the Pacific in the cockpit of his solar-powered plane, Solar Impulse. He writes one last text message to his family and promptly hears back from his three daughters: "Long live the spirit of exploration!"

Piccard's grandfather, the experimental physicist Auguste Piccard, had already been a legend in his own time. In 1931, he became the first human to enter the stratosphere, reaching an altitude of 15,781 meters in a hot-air balloon. He was immortalized by the famous comic artist Hergé in the character of Professor Calculus in Tintin. And then there was Bertrand Piccard's father, Jacques, who in 1960 together with a naval lieutenant descended to the lowest point on earth, diving to the bottom of the Mariana Trench at 10,916 meters below sea level in a submersible designed by the Piccards.

Curiosity is not an end in itself

Jules Vernes would have found kindred spirits in this family. Yet its adventures and records were never an aim in themselves. Every experience at the extremes had a substantive goal: to better understand the world and make it a better place. Thus, in the stratosphere, Auguste Piccard succeeded in experimentally proving part of the theory of relativity; his scientific partner in this experiment was one Albert Einstein. Jacques Piccard, in turn, was able to show through his dive that there are currents even in the deep sea – and warned against dumping radioactive waste there. As for the third Piccard: With all his projects, he has sought to create impetus for a more sustainable future. Hence the name of the sunlight-powered Solar Impulse, the plane he took turns piloting around the world with André Borschberg. "You fly silently, conscious of the sun giving you its energy, and you could keep flying forever

"Adventure in the 21st century consists of using a pioneering spirit to develop the quality of life that present and future generations have a right to expect."

without releasing a gram of CO₂," recounts Bertrand Piccard. "It felt as if I were flying through the future."



In the lead role: new technologies

While for Piccard's forefathers, technologies were primarily means to an end, for him they play the starring role. To Piccard they are the key to a sustainable future, and at the same time a kind of peacemaker between the economy, people and the environment. While ecological movements have been proclaiming for half a century that humankind and economies must rein themselves in to protect the environment, Piccard believes that the seemingly conflicting interests can be reconciled – through sustainable technologies. That is why, with his Solar Impulse Foundation, he is promoting a current total of 1,450 eco-friendly technology solutions worldwide. "We cannot protect the environment by shrinking the economy," he says.

Rules are only an expression of our time

However, Piccard knows from experience how difficult it is to establish new technologies. "I still have calculations from the aerospace industry intended to prove to me by all the rules of physics that Solar Impulse could not be built," relates Piccard. The experts told him the solar aircraft would turn out too big and heavy. In the end, Piccard and Borschberg found a shipyard that built the large body parts for Solar Impulse. "Many people forget that rules are only an expression of our time," asserts Bertrand Piccard. By contrast, he says, inquisitive researchers are never satisfied with the status quo and want to move boundaries to achieve better things.

Curiosity as the key to entrepreneurial success

All spirit of inquiry has its origins in childhood, as children are naturally inquisitive. He himself, says Piccard, was a hard pupil for his teachers to manage. "I did not accept any rules that I did not understand for myself." He always overflowed with questions and curiosity. Unfortunately, he says, curiosity is often stifled in children by parents and teachers, and later discouraged by supervisors at work. In actuality, Piccard believes, a lively curiosity is crucial not only to personal happi-

"It's always just us humans, our rules and routines, that limit our curiosity."

ness but also to corporate success. For him, every job has the potential to become a personal adventure, provided that one constantly questions one's tasks and that this is tolerated. "It's a question of our inner attitude, but naturally also a matter of the organizational culture," he says. He does not believe the desire to know has any natural limits. "It's always just us humans, our rules and routines, that limit our curiosity."

Venturing into new dimensions

Companies should therefore encourage employees to take risks, critically question rules, think outside the box and always explore new perspectives. Once again Piccard finds an analogy in his adventures – this time in balloon flight. The pilot of a hot-air or gas balloon can directly control only its altitude – the vertical dimension – but not the horizontal direction of flight. This means that a balloonist who wants to reach a specific destination or even – as Piccard did in 1999 – circumnavigate the Earth, must always find the right winds by climbing or descending along the vertical axis. A successful balloon flight thus requires thinking and moving in multiple dimensions – an insight that also holds lessons for technology firms. Instead of plodding along at a single level and hoping for fair winds, a company that is to succeed must continually explore new dimensions with curiosity and an investigative spirit in order to advance in the desired direction.

How Comet is exploring for a better future.



Expanding horizons and growing together.



[Read more](#)



Bringing everyone on board for a sustainable future.



[Read more](#)

Expanding horizons and growing together.

Over and over again in the past 75 years, Comet has reinvented itself and expanded the boundaries of technology. What has made this possible is the explorer mindset of Comet's people. Our shared curiosity and perpetual search for what is better will continue to guide us in the future.

75 years of the spirit of discovery at Comet

Over our 75-year history, the world has changed dramatically. But through inquisitive research, and with courage and perseverance, Comet has succeeded time and again in reinventing itself, shifting the boundaries of technology and succeeding through innovation. This would not have been possible without our deep conviction that, with innovative technologies, we can make a better future. Reflecting this, the motto for our anniversary year is "75 years exploring for better".



"Curiosity is the driving force for me to engage with the new and unknown."

Mareike Töpperwien

Senior CT Technology Developer,
Hamburg, Germany



At Comet, we also want to take this explorer mentality into the future: curious, open to new things, and courageous.

But what does it mean to be an "explorer" in the 21st century? For the explorer Bertrand Piccard, it means being someone who does not simply accept the status quo, someone who wants to understand and improve things. To Piccard, it's about exploring new ways of acting and thinking. And it is curiosity that drives explorers ([Breaking the rules, for a better future.](#)).

Curiosity as a Comet superpower

So where do you find this explorer mentality at Comet? Comet would not exist without employees who, thirsty for knowledge, want to understand and improve technology, team members who are curious to take in the perspectives of others in order to overcome challenges together, but also employees who question that which is and want to improve Comet as an organization and make it more sustainable.



"The best part of my work is knowing that we're making a difference, that we're driving technology forward and solving real-world industry problems."

Anton du Plessis

Head of Sales Europe, Dragonfly Solutions, Canada

"Curiosity is the driving force for me to engage with the new and unknown. It makes me try things without having thought everything through completely beforehand. And sometimes that's what leads to new discoveries that help solve particular problems," says Mareike Töpperwien, Senior CT Technology Developer at Comet X-Ray Systems. "Comet gives me the opportunity to research innovative solutions to specific customer problems, like new scan types for better visualization of the smallest structures, or new algorithms for image enhancement. The advanced equipment available to me, such as the latest-generation CT systems, helps a lot. And even more importantly, I am surrounded by many bright and curious colleagues who support me and inspire me with new ideas."

"When we want to push outward on the limits of what is technologically possible, that's 100% driven by curiosity," notes Anton du Plessis, Head of Sales Europe, Object Research Systems. "I originally come from an academic research background. Working at Comet has allowed me to immerse myself in the industrial and commercial application of technology. Recently I moved into sales, so I work even more closely with our customers," du Plessis continues. "The best part of this work is knowing that we're making a difference, that we're driving technology forward and solving real-world industry problems."

Space to expand horizons and grow

Comet wants to continue to be a magnet for people who are curious and who, together, want to shape the future with our innovative technologies.

In our anniversary year of 2023, we not only want to create an environment in which our employees can live out their curiosity, but are also interested in questions that employees might have for us. "Our promise as an employer is simple: It starts with curiosity. With curiosity as a "superpower", our employees find room to grow as individuals and as part of Comet," says Catherine MacGillivray-Prantl, Global Head of Talent Management & Culture.

At Comet, we are curious. Are you?

Bringing everyone on board for a sustainable future.

As part of its global sustainability program, Comet is systematically embedding sustainability in its global organization and in its strategy. At the same time, we are promoting a corporate culture in which every Comet employee worldwide can and should make a contribution to greater sustainability.

Many sustainability efforts at Comet have been in place for years. As an integral part of the high-performance organization that we are becoming, however, sustainability must be much more firmly established in the company globally, both at the strategy level through our business model (see [purpose](#)), and in our culture.

Sustainability in the global organization

To address the subject in a structured way at a global level, Comet launched a worldwide sustainability program in January 2021 ([Sustainability report 2021](#)). "While the first year was primarily about a Group-wide stocktaking to determine our starting point, in the second year we worked more intensively on a common understanding of sustainability and what it should mean for the future Comet organization," says Ulrich Steiner, Vice President of Investor Relations and Sustainability. "We developed a [sustainability policy](#), clearly defined the respective responsibilities in the organization and agreed on a climate roadmap. Just as importantly, we motivated our employees to make concrete suggestions for sustainability at Comet and get involved."



"With the ideas we collected globally, we can make concrete suggestions to the ESG leaders."

Edouard Perroud
Financial Controller, Group
Functions, Flamatt, Switzerland

100 ideas to tackle climate change

The fact that sustainability is also a personal concern for many Comet employees is demonstrated by the initiative titled "Let's Gather 100 Ideas to Tackle Climate Change," which Edouard Perroud, Financial Controller, Group Functions, launched on the internal social network Yammer in May 2022. "I've heard a lot of discussions among staff about what we could do or what we should change," says Edouard Perroud, "but the barrier to implementation is too high for the individual employee. With the ideas we collected globally, together we can make concrete suggestions to Comet's ESG leaders." By the end of the year, 75 ideas had been gathered. They range from installing solar panels, reducing parking spaces in favor of green areas, subsidizing public transport tickets for employees, and eco-friendly clothing for production employees, to no longer using coffee capsules at the company.



"The exchange with others showed me many places in the company where there is potential to become more sustainable."

Lukas Forster

Team Leader, Production Engineering, X-Ray Tubes, Flamatt, Switzerland

What Comet wants to promote is a corporate culture that creates even more awareness and background knowledge of what sustainability means. In 2022, to help achieve this, the first [Climate Fresk Workshop](#) was held in Flamatt. "Although I had some previous knowledge of the scientific side of climate change, I gained a lot more understanding of it all in the workshop, and the exchange with other Comet employees showed me many places in the company where there is potential to become more sustainable," says Lukas Forster, Team Leader, Production Engineering, X-Ray Tubes, IXM.

It is not only in Flamatt that the issue of sustainability is being addressed more proactively, but also at our locations worldwide. In April 2022, for example, a training session on the [United Nations Sustainable Development Goals](#) (SDG) with a certified instructor was held at our site in Japan.

Investing in the future by improving access to education

A major aspiration of Comet's is to spark enthusiasm for technology in the next generation (See the annual report 2020: [Engaged for the next generation](#)). Access to information and education is foundational to this. That is why, since 2020, we have been using Comet's global year-end campaign to support UNICEF education projects. In 2022, we joined with the many players in our game-based campaign to raise funds for the [Giga Initiative](#) by UNICEF and the International Telecommunication Union (ITU) that aims to close the digital divide by connecting schools around the world to the Internet.

Local engagement for a better and fairer world

In 2022, Comet employees at our sites around the world again showed a great deal of personal initiative when it came to supporting local sustainability projects.





"Japan, too, has what is known as 'period poverty', where women with very low annual incomes cannot afford feminine hygiene items."

Miho Sugisawa Achahrour
Marketing & Communication
Specialist, Comet Technologies
Japan

For example, in March 2022, twenty-one employees of Comet Technologies Malaysia came together to pick up trash on a beach in Penang, Malaysia. Six visiting employees of Comet San Jose from California also took part in the beach cleanup.

Our Yokohama site took a stand for equality in 2022. "Japan, too, has what is known as 'period poverty'," says Miho Sugisawa Achahrour, Marketing & Communication Specialist, Comet Technologies Japan. "As a 2021 study showed, among Japanese women with low annual incomes (2.5 million yen or less), about 30% of women cannot afford feminine hygiene items once or more a year, and about 20% cannot afford them at all." Comet Japan therefore teamed up with the Yokohama Gender Equality Promotion Association and the Yokohama City Council of Social Welfare to donate hygiene products for women.



In Silicon Valley in the USA, the high cost of living can become a daily financial challenge, especially for low-income families. The [Second Harvest](#) project seeks to ensure that no one in the local community has to choose between paying their bills and affording a healthy meal. In 2022, Comet employees again collected donations for this program.

"We still have a long way to go," says Ulrich Steiner, "but sustainability is increasingly finding its way into all decisions and processes at Comet, and the great commitment of our employees makes me very confident for the future."

Comet Group Consolidated Financial Statements

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Consolidated statement of income

In thousands of CHF	Note	2022	%	2021	%
Net sales	3/4	586,395		513,721	
Cost of sales		(324,761)		(290,921)	
Gross profit		261,633	44.6%	222,800	43.4%
Other operating income	5	4,899	0.8%	3,682	0.7%
Development expenses	7	(63,766)	- 10.9%	(55,344)	- 10.8%
Marketing and selling expenses		(54,687)	- 9.3%	(47,637)	- 9.3%
General and administrative expenses		(49,105)	- 8.4%	(39,416)	- 7.7%
Operating income		98,975	16.9%	84,085	16.4%
Interest income	9	440	0.1%	222	0.0%
Interest expenses	9	(1,715)	- 0.3%	(1,544)	- 0.3%
Net losses on derivative fair value	9	(192)	- 0.0%	(495)	- 0.1%
Net losses on foreign exchange	9	(2,140)	- 0.4%	(60)	- 0.0%
Income before tax		95,368	16.3%	82,208	16.0%
Income tax	10	(17,259)	- 2.9%	(14,771)	- 2.9%
Net income		78,109	13.3%	67,437	13.1%
Earnings per share in CHF, diluted and basic	11	10.05		8.68	
Operating income		98,975	16.9%	84,085	16.4%
Depreciation, amortization and impairment	8	19,939	3.4%	18,663	3.6%
EBITDA		118,913	20.3%	102,749	20.0%

Consolidated statement of comprehensive income

In thousands of CHF	Note	2022	2021
Net income		78,109	67,437
Other comprehensive income			
Foreign currency translation differences		(5,000)	(242)
Total items that will be reclassified to the income statement on realization		(5,000)	(242)
Actuarial gains on defined benefit plans	24	10,886	1,954
Income tax	10	(1,483)	(283)
Total items that will not subsequently be reclassified to the income statement		9,404	1,671
Total other comprehensive income or (loss)		4,404	1,429
Total comprehensive income		82,513	68,867

Consolidated balance sheet

In thousands of CHF	Note	Dec. 31, 2022	%	Dec. 31, 2021	%
Assets					
Cash and cash equivalents		125,945		115,533	
Trade and other receivables ¹	12	89,103		72,692	
Other assets	13	1,303		1,925	
Tax receivables		501		2,612	
Inventories	14	122,468		99,268	
Prepaid expenses	15	5,441		4,269	
Total current assets		344,761	61.9%	296,299	61.4%
Property, plant and equipment	16	119,968		111,703	
Right-of-use assets	17	32,401		18,791	
Intangible assets	18	38,904		41,027	
Other assets – non-current financial assets	13	2,826		3,122	
Deferred tax assets	10	17,940		11,398	
Total non-current assets		212,039	38.1%	186,042	38.6%
Total assets		556,801	100.0%	482,341	100.0%
Liabilities and shareholders' equity					
Current lease liabilities	17	3,955		3,949	
Trade and other payables	21	40,917		36,437	
Contract liabilities ¹	3	16,609		27,086	
Other financial liabilities	13	11		894	
Tax payables		17,368		7,132	
Accrued expenses	22	42,188		35,716	
Current provisions	23	6,955		6,743	
Total current liabilities		128,002	23.0%	117,957	24.5%
Non-current debt	20	59,669		59,571	
Non-current lease liabilities	17	34,242		15,891	
Non-current provisions	23	973		267	
Employee benefit plan liabilities	24	1,707		12,997	
Deferred tax liabilities	10	676		676	
Total non-current liabilities		97,267	17.5%	89,402	18.5%
Total liabilities		225,269	40.5%	207,359	43.0%
Capital stock	25	7,774		7,770	
Capital reserve		3,005		1,918	
Retained earnings		354,890		294,430	
Foreign currency translation differences		(34,137)		(29,137)	
Total equity attributable to shareholders of Comet Holding AG		331,532	59.5%	274,981	57.0%
Total liabilities and shareholders' equity		556,801	100.0%	482,341	100.0%

¹ In the year under review and in the prior year, the IXS division's prepayments from customers in "contract liabilities" were netted with already invoiced contract assets in "trade and other receivables" (see note 2.3).

Consolidated statement of cash flows

In thousands of CHF	Note	2022	2021
Net income		78,109	67,437
Income tax	10	17,259	14,771
Depreciation, amortization and impairment	8	19,939	18,663
Net interest expense	9	1,275	1,322
Share-based payments	29	1,242	1,256
Losses on disposal of property, plant and equipment		60	51
Other non-cash (income) or expense		(166)	(119)
Change in provisions	23	1,026	(1,549)
Change in other working capital		(41,648)	(16,440)
Taxes paid		(12,689)	(14,903)
Net cash provided by operating activities		64,407	70,489
(Outflow) from disposal of businesses		—	(261)
(Outflow) from acquisitions		—	(101)
Purchases of property, plant and equipment	16	(20,681)	(9,991)
Purchases of intangible assets	18	(2,072)	(1,476)
Disposals of property, plant and equipment	16	204	230
Purchase of other assets		(478)	(1,724)
Lease payments received	13	353	378
Interest received	9	440	222
Net cash (used in) investing activities		(22,234)	(12,722)
Net proceeds from issue of bond (2021 – 2026)	20	—	59,503
Repayment of bond (2016 – 2021)	20	—	(60,000)
Repayment of lease liabilities	17	(4,338)	(4,927)
Lease incentive	17	3,530	—
Interest paid		(1,618)	(1,697)
Dividend payment to shareholders of Comet Holding AG	32	(27,193)	(10,098)
Net cash (used in) financing activities		(29,619)	(17,219)
Net increase in cash and cash equivalents		12,554	40,548
Foreign currency translation differences on cash and cash equivalents		(2,142)	304
Cash and cash equivalents at January 1		115,533	74,681
Cash and cash equivalents at December 31		125,945	115,533

Consolidated statement of changes in equity

In thousands of CHF	Note	Equity attributable to shareholders of Comet Holding AG				Total shareholders' equity
		Capital stock	Capital reserve	Retained earnings	Foreign currency translation differences	
January 1, 2021		7,768	11,631	224,454	(28,895)	214,956
Net income		—	—	67,437	—	67,437
Other comprehensive income		—	—	1,671	(242)	1,429
Total comprehensive income		—	—	69,108	(242)	68,866
Dividend payment to shareholders of Comet Holding AG	34	—	—	(10,098)	—	(10,098)
Alignment of capital reserve ¹		—	(10,118)	10,118	—	—
Increase in capital (for stock compensation)	27	2	405	(409)	—	(2)
Share-based payments	31/32	—	—	1,258	—	1,258
December 31, 2021		7,770	1,918	294,430	(29,137)	274,981
Net income		—	—	78,109	—	78,109
Other comprehensive income		—	—	9,404	(5,000)	4,404
Total comprehensive income		—	—	87,512	(5,000)	82,513
Dividend payment to shareholders of Comet Holding AG	32	—	—	(27,193)	—	(27,193)
Alignment of capital reserve ¹		—	(8)	8	—	—
Increase in capital (for stock compensation)	25	4	1,095	(1,192)	—	(93)
Share-based payments	29/30	—	—	1,324	—	1,324
December 31, 2022		7,774	3,005	354,890	(34,137)	331,532

¹ In the year under review and in the prior year, the amount of the capital reserve reported in the consolidated financial statements was aligned to that of the capital reserve reported in the separate financial statements of Comet Holding AG.

Notes to the consolidated financial statements

01 Nature of the business activities

The Comet Group ("Comet", the "Group") is one of the world's leading vendors of x-ray and radio frequency (RF) power technology. With high-quality components, systems and services, marketed under the "Comet" and "Comet Yxlon" brands, the Group helps its customers optimize the quality, reliability and efficiency of their products and processes. Comet Yxlon x-ray systems for non-destructive inspection are supplied to end customers in the electronics, automotive, aerospace and energy sectors. Under the Comet brand, the Group builds components and modules such as x-ray sources, vacuum capacitors, RF generators and impedance matching networks, marketed to manufacturers in the semiconductor, automotive and aerospace industries as well as the security sector.

02 Accounting policies

The consolidated financial statements (except with respect to certain financial instruments) have been drawn up under the historical cost convention. The fiscal year-end for the financial statements of all Group companies is December 31. These consolidated financial statements have been prepared in compliance with Swiss stock corporation law and International Financial Reporting Standards (IFRS). All IFRS in force at the balance sheet date and all interpretations (IFRIC) of the International Accounting Standards Board (IASB) were applied. Comet did not early-adopt new standards and interpretations unless specifically stated. The significant accounting policies applied are unchanged from the prior year except as set out below.

As a result of rounding and the presentation in thousands of Swiss francs, individual numbers in the consolidated financial statements may not sum precisely to the totals indicated.

02.1 Changes in accounting policies

Revised and new accounting rules

With effect from January 1, 2022, Comet has applied the following new or adjusted IFRS/IFRIC for the first time:

- IAS 37 – Provisions, Contingent Liabilities and Contingent Assets: Onerous Contracts – Cost of Fulfilling a Contract (Amendments to IAS 37)
- IAS 16 – Property, Plant and Equipment: Proceeds before Intended Use (Amendments to IAS 16)
- IFRS 3 – Business Combinations: Reference to the Conceptual Framework (Amendments to IFRS 3)

On May 28, 2020, the International Accounting Standards Board (IASB) published an amendment to IFRS 16 concerning COVID-19-related rent concessions. The amendment was effective from June 1, 2020 and initially applied to rent concessions granted up to and including June 30, 2021. On March 31, 2021, the IASB published an additional amendment to extend the applicability period to cover grant dates up to and including June 30, 2022. Comet applies this practical expedient. However, in the year under review this had no impact on the consolidated financial statements (prior period: nil).

The new or amended standards and interpretations had no material effect on the Group's financial position, results of operations and cash flows.

02.2 New accounting rules becoming effective in subsequent periods

Standard	Expected impact	Effective date	Planned adoption by Comet
IAS 1 – Presentation of Financial Statements: Disclosure of Accounting Policies (Amendments to IAS 1 and IFRS Practice Statement 2)	*	Jan. 1, 2023	Fiscal year 2023
IAS 8 – Accounting Policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates (Amendments to IAS 8)	*	Jan. 1, 2023	Fiscal year 2023
IAS 12 – Income Taxes: Deferred Tax Related to Assets and Liabilities Arising from a Single Transaction (Amendments to IAS 12)	*	Jan. 1, 2023	Fiscal year 2023
IAS 1 – Presentation of Financial Statements: Classification of Liabilities as Current or Non-current (Amendments to IAS 1)	*	Jan. 1, 2024	Fiscal year 2024
IFRS 16 – Lease Liability in a Sale and Leaseback (Amendments to IFRS 16)	*	Jan. 1, 2024	Fiscal year 2024
IAS 1 – Non-current Liabilities with Covenants (Amendments to IAS 1)	*	Jan. 1, 2024	Fiscal year 2024

* Expected to have no, or no significant, impact on the financial position, results of operations and cash flows.

02.3 Correction in the presentation of contract assets and contract liabilities

As part of a review of the finance processes, Comet challenged the presentation of contract assets and contract liabilities and concluded that prepayments from clients in contract liabilities should have been netted with already invoiced contract assets in "trade and other receivables". The adjustment amounts to CHF 8.1 million in prior year.

The prior-year comparatives have been restated as shown below. These restatements have no effect on net loss/income.

In thousands of CHF	Note	Dec. 31, 2022	Dec. 31, 2021 - Restated	Adjustment	Dec. 31, 2021 - Reported
Assets					
Trade and other receivables	12	89,103	72,692	(8,075)	80,767
Total current assets		344,761	296,299	(8,075)	304,373
Total assets		556,801	482,341	(8,075)	490,415
Liabilities and shareholders' equity					
Contract liabilities	3	16,609	27,086	(8,075)	35,161
Total current liabilities		128,002	117,957	(8,075)	126,033
Total liabilities		225,269	207,359	(8,075)	215,435
Total equity attributable to shareholders of Comet Holding AG		331,532	274,981	—	274,981
Total equity attributable to shareholders of Comet Holding AG in %		59.5%	57.0%		56.1%
Total liabilities and shareholders' equity		556,801	482,341	(8,075)	490,415

Interim Report 2022

The Board of Directors of Comet also approved retrospective restatements in the Interim Report 2022 Comet issued on July 12, 2022. The adjustment of trade and other receivables and contract liabilities

amounted to CHF 4.2 million. These restatements have no effect on net loss/income.

02.4 Estimates

Comet's consolidated financial statements contain assumptions and estimates that affect the reported financial position, results of operations and cash flows. These assumptions and estimates were made on the basis of management's best knowledge at the time of preparation of the accounts. Actual results may differ from the values presented. The following estimates have the greatest effects on the consolidated financial statements:

- Intangible assets (see notes 18 and 19): For acquisitions, the fair value of the acquired net assets (including acquired intangible assets) is estimated. Any amount paid in excess of this estimate represents goodwill. Intangible assets with a finite life are written off over the expected period of use; those with an indefinite life (primarily goodwill and rights to trademarks and names) are not amortized but are tested annually for impairment. Especially in the determination of the value in use of goodwill and rights to trademarks and names, differences between assumed and actual outcomes could lead to changes in the results of impairment testing. The assumptions concerning the achievable margins and the growth rates have a significant impact on impairment test outcomes. The valuation of goodwill and other intangibles, as well as the estimation of useful life, have an effect on the consolidated financial statements.
- Provisions (see note 23) are, by definition, liabilities of uncertain amount. Future events can thus lead to adjustments that affect income.
- Deferred tax assets (see note 10) are recognized only if it is likely that taxable profits will be earned in the future. The tax planning is based on estimates and assumptions as to the future profit trajectories of the Group companies that may later prove incorrect. This can lead to changes with an effect on income.
- Employee benefit plans (see note 24): The Group operates employee benefit plans for its staff that are classified as defined benefit plans under IFRS. These defined benefit plans are valued annually, which requires the use of various assumptions. Differences between the actual outcomes and the assumptions, particularly as to the discount rate for future obligations and as to life expectancy, may have effects on the valuation of plan assets and thus on the financial position of the Group. The impact of the most important parameters on the net present value of the obligation is presented in note 24.

Business environment, including impacts of COVID-19

Driven by the digitalization of society, the underlying long-term demand for semiconductor chips, and thus for products of the PCT division (vacuum capacitors and RF impedance matching networks), continues to be strong. In 2022, the x-ray divisions, IXM and IXS, benefited again from robust demand in their primary end markets: semiconductor & electronics, automotive, aerospace and security. Although the economic environment deteriorated toward the end of the year and is likely to weigh on business performance in the short term, robust growth is expected in our markets and – thus for Comet – in the medium to long term.

With respect to on-going uncertainties (for example, potential supply chain issues) and geopolitical tensions, Comet critically reviewed the assumptions and estimates that affect the financial position, results of operations and cash flows. In this review, no relevant changes were identified that would have a material impact on these financial statements.

Comet received no pandemic-related government support in fiscal year 2022 (prior year: nil).

02.5 Consolidation

02.5.1 Basis of consolidation

In 2022, there were no changes in the basis of consolidation from the prior year.

The consolidated financial statements thus comprise the accounts of the companies listed below:

Company	Registered office	Equity interest and voting rights in %	
		2022	2021
Comet Holding AG	Flamatt, Switzerland	100%	100%
Comet AG	Flamatt, Switzerland	100%	100%
Comet Electronics (Shanghai) Co. Ltd.	Shanghai, China	100%	100%
Comet Mechanical Equipment (Shanghai) Co. Ltd.	Shanghai, China	100%	100%
Comet Technologies USA, Inc.	Shelton, CT, USA	100%	100%
Comet Technologies Korea Co. Ltd.	Suwon, Korea	100%	100%
Comet Yxlon GmbH ¹	Hamburg, Germany	100%	100%
Comet Technologies Denmark A/S	Taastrup, Denmark	100%	100%
Comet Technologies Japan KK	Yokohama, Japan	100%	100%
Yxlon (Beijing) X-Ray Equipment Trading Co. Ltd.	Beijing, China	100%	100%
Comet Technologies Malaysia Sdn. Bhd.	Penang, Malaysia	100%	100%
Object Research Systems (ORS) Inc.	Montreal, Canada	100%	100%
Comet Solutions Taiwan Ltd.	Hsinchu County, Taiwan	100%	100%

¹ The company was renamed "Comet Yxlon GmbH" from "Yxlon International GmbH".

02.5.2 Method of consolidation

The consolidated financial statements represent the aggregation of the annual accounts of the individual Group companies, which are prepared using uniform accounting principles. Those companies controlled by Comet Holding AG are fully consolidated. This means that these companies' assets, liabilities, equity, expenses and income are entirely included in the consolidated financial statements. All intragroup balances and transactions, unrealized gains and losses resulting from intragroup transactions, and dividends are eliminated in full.

Acquisitions and goodwill

Companies are consolidated from the date on which effective control passes to the Group. Consolidation ends only when effective control ceases. On acquisition, the identifiable assets, liabilities and contingent liabilities are measured at fair value and included in the accounts using the acquisition method. For acquisitions, intangible assets that arise from a contractual or legal right or are separable from the business entity, and whose fair value can be measured reliably, are reported separately. Goodwill, being the excess of the aggregate consideration transferred over the fair value of the net assets of the acquired subsidiary, is initially measured at cost. If the aggregate consideration transferred is lower than the fair value of the acquired net assets, the difference is recognized as negative goodwill in other operating income

at the acquisition date. Goodwill and other intangible assets are allocated on acquisition to those cash generating units expected to benefit from the acquisition or to generate future cash flows as a result of it. When Group companies are sold, the difference between their sale price and their net assets, plus accumulated currency translation differences, is recognized as operating income in the consolidated statement of income.

Foreign currency translation

The functional currency of the Group companies is the respective national currency. Transactions in a currency other than the functional currency are translated at the exchange rate prevailing at the transaction date. Financial assets and liabilities are translated at the balance sheet date at the exchange rate as of that date; the resulting currency translation differences are reported in the income statement. The consolidated financial statements are presented in Swiss francs. The financial statements of the Group companies are translated at the average exchange rates for the year (the "average rate" in the table below) for the income statement and at year-end rates (the "closing rate") for the balance sheet. The resulting currency translation differences are recognized in other comprehensive income. Currency translation differences from intragroup loans for the long-term financing of Group companies are partly recognized in other comprehensive income, to the extent that repayment is neither planned nor is likely to occur in the foreseeable future.

The exchange rates used to translate the most important currencies are listed below:

				Closing rate		Average rate	
Country or region			Dec. 31, 2022	Dec. 31, 2021	2022	2021	
USA	USD	1	0.925	0.914	0.955	0.915	
Eurozone	EUR	1	0.990	1.035	1.005	1.079	
China	CNY	1	0.134	0.143	0.142	0.142	
Japan	JPY	100	0.705	0.794	0.731	0.831	
Denmark	DKK	1	0.133	0.139	0.135	0.145	
Republic of Korea	KRW	1,000	0.734	0.768	0.742	0.797	
Malaysia	MYR	1	0.210	0.219	0.217	0.221	
Canada	CAD	1	0.683	0.718	0.734	0.729	
Taiwan	TWD	100	3.007	3.294	3.209	3.279	

02.6 Measurement and recognition policies

Revenue recognition (sales and other income)

Net sales represent the revenue from the sale of goods and services to third parties, net of rebates and other price reductions. The Group's revenue is derived from the sale of goods (including spare parts) by the PCT and IXM divisions and the sale of systems (including services such as installation) by the IXS division. Revenue from the sale of goods, including spare parts, systems and system-related services, is as a rule recognized on the basis of a single performance obligation, which is satisfied at a specific point in time. The performance obligation is satisfied, and the revenue recognized, when the customer acquires control of the product or service. In the sale of goods that are not systems, the transfer of control generally occurs at the time of delivery. Performance obligations for system sales (including for installation) are fulfilled at the time of acceptance by the customer. In connection with both non-system goods and with systems, Comet also offers services.

Warranty obligations for providing an additional service to the customer (service-type warranties), such as an extension of the warranty period, are separate performance obligations and the revenue associated with them is recognized over time. For general maintenance services and defect correction intended to ensure that the delivered good is, or performs, as specified in the contract (assurance-type warranties), the estimated cost of the liability is recognized as a provision in accordance with IAS 37.

Customer contributions to development projects and payments for the delivery of the respective first prototype are recorded in other operating income; subsequent deliveries of prototypes are reported as sales.

Variable price elements (variable consideration) exist both in retroactive rebates when the quantity of products purchased exceeds a certain threshold in the calendar year, and in individual discounts on products. The amount of the rebate is estimated using the most-likely-amount method and as a rule is allocated proportionately to all performance obligations under the contract.

Sales commissions owed for agent activities are capitalized at contract inception as incremental costs attributable to obtaining a contract and a liability of equal amount is recognized for sales commissions. Their recognition as an expense occurs as soon as Comet has transferred control of the products to the customer. In principle, no interest effect is recognized for contract liabilities and prepayments by customers, as the period between the time of transfer of a promised good or service to the customer and the time of payment is not more than one year.

Cash and cash equivalents

In addition to cash on hand and balances in checking accounts at banks, cash and cash equivalents include short-term highly liquid cash investments and time deposits with original maturities of up to three months. Time deposits and similar instruments with original maturities of more than three months, but less than twelve months, are classified as other current financial assets.

Trade and other receivables and contract assets

Trade receivables, other receivables and contract assets are reported at their face value less any necessary impairment charges. Comet provides for impairment using the simplified approach by recognizing an allowance in the amount of the losses expected over the remaining life of the instruments (known as the expected credit loss model). For specific doubtful arrears with objective indications of impairment, impairment charges are applied individually.

Whether a receivable or a contract asset is recognized is governed by whether the right to consideration is unconditional (leading to recognition of a receivable) or conditional (leading to recognition of a contract asset).

Financial assets and liabilities

Financial assets and liabilities are initially measured at fair value (market value), including transaction costs, except in the case of financial assets categorized as at fair value through profit or loss, for which transaction costs are recorded directly in financing expenses. All pur-

chases and sales of financial assets are recognized at the transaction date.

- Financial items at fair value through profit or loss: These include all derivatives, trading positions, and certain financial assets and liabilities designated as falling into this category. These assets and liabilities are recognized at fair value in the balance sheet. Changes in fair value are reported as financing income or expense in the reporting period in which they occur.
- Financial items at amortized cost: These are measured at cost using the effective interest method.

Fair value is determined based on quoted or other market prices. In the fiscal year as in the prior year, no hedge accounting under IFRS 9 or IAS 39 was applied to any hedging transactions. Financial assets are recognized as soon as Comet acquires control of them, and derecognized when it ceases to have control, i.e., when it has sold the rights or they have lapsed. Financial liabilities are derecognized when the obligation specified in the contract is discharged or is canceled or expires.

Inventories

Inventories are recorded at the lower of cost and net realizable value. Net realizable value represents the estimated normal sale price less the costs of completion, marketing, selling and distribution. Raw materials and purchased products are measured using the weighted-average method; internally produced goods are measured at standard costs. Inventories include proportionate shares of production overheads.

Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and impairment. Borrowing costs related to qualifying assets form part of the historical cost. Depreciation is provided on a straight-line basis over the estimated useful life of the assets. The expense for depreciation of property, plant and equipment is recognized in the income statement under that expense category which corresponds to the function of the particular asset in the Group. Land values are not depreciated. Impairment charges are recognized as a separate line item under accumulated depreciation and impairment. Maintenance costs are recognized as assets only if the maintenance extends the expected life of the asset, expands production capacity or otherwise increases asset values. The costs of maintenance and repair that do not increase asset values are charged directly to income. The following estimated useful lives are applied in determining depreciation:

Buildings	20 – 40 years
Plant and equipment	6 – 10 years
Other tangible assets	3 – 10 years

Right-of-use assets and lease liabilities

As a lessee, Comet recognizes leases on the basis of a right-of-use model. At the inception of every contract, Comet assesses whether it includes a lease, separating lease components from non-lease components. No assets and liabilities are recognized for leases with a term of one year or less and for leases of low-value assets (with a value when new of less than CHF 5,000); the expenses for these are recognized directly in the income statement. The initial measurement of the right of use for a leased asset is made by calculating the present value of the

lease payments, plus initial direct costs, plus estimated costs for dismantling, removal and restoration, less lease incentives received. The lease liabilities correspond to the present value of the discounted payment obligations. For discounting the lease payments, Comet uses the interest rate implicit in the lease. In doing so, the currency area in which the leased asset is located and the Comet-specific credit risk are taken into account. Comet primarily has leases with fixed payments, which includes leases with rent-free periods and ones with rising payments. Leases with variable payments are immaterial.

Comet's leases may include renewal options. These are included in the calculations only if, taking into account all significant determining factors, they are considered highly likely to be exercised. For indefinite leases, the following principles apply (the extension periods cited are from the lease inception or from the expiry of the minimum lease term):

	Maximum extension
Buildings and warehouses	3 years
Plant and equipment	2 years
Vehicles and other tangible assets	1 year

In the event of a material modification, Comet remeasures the lease liability at the date of the change. Adjustments to the lease liability are deducted from or added to the corresponding right-of-use asset. Any difference remaining upon early termination of a lease is recognized through profit or loss.

Where Comet is the lessor, the lease is accounted for either as an operating or a finance lease, depending on its terms.

Intangible assets

The intangible assets recognized are goodwill, rights to trademarks and names, customer lists, technology, licenses, patents, and software. Intangible assets are recognized at cost and generally amortized on a straight-line basis over their expected useful life. Goodwill and acquired rights to trademarks and names are not amortized but are tested annually for impairment (see section "Impairment of non-current assets"). The expense for amortization of intangible assets with finite useful lives is recognized in the income statement under that expense category which corresponds to the function of the particular asset in the Group. The following estimated useful lives are generally applied in determining amortization:

Customer lists	10 – 15 years
Technology	5 – 10 years
Computer software	3 – 5 years

Provisions

Provisions are recognized only where Comet has a present obligation to a third party arising from a past event and the amount of the obligation can be estimated reliably. No provisions are recognized for possible losses that may result from future events.

Provisions are classified as current to the extent that the related cash outflows are expected to occur within one year from the balance sheet

date. Conversely, the cash outflows in respect of non-current provisions are expected to occur more than twelve months after the balance sheet date. If the interest effect is material, the cash outflows are discounted.

Post-employment benefits

Comet maintains post-employment benefit plans for its employees which differ according to the local circumstances of the individual Group companies. The benefit plans are financed by contributions to benefit arrangements that are separate legal entities (foundations or insurance companies) or by the accumulation of reserves in the balance sheet of the respective Group company. In the case of defined contribution plans or economically equivalent arrangements, the expenses accrued in the reporting period represent the agreed contributions of the Group company. For defined benefit plans, the service costs and the present value of the defined benefit obligation are calculated in actuarial valuations by independent experts, using the projected unit credit method. The calculations are updated annually. The surplus or deficit recognized in the balance sheet is equal to the present value of the defined benefit obligation as determined by the actuary, less the fair value of plan assets. Any resulting net surplus is recognized as an asset only to the extent of the potential economic benefit that may be realized from this asset in the future, taking into consideration IFRIC 14. The expense charged to income is the actuarially determined service cost plus the net interest cost. Actuarial gains and losses are recognized in other comprehensive income. They comprise experience adjustments (the effects of differences between the previous actuarial assumptions and the observed outcomes) and the effects of changes in actuarial assumptions (particularly regarding the discount rate and life expectancy).

Length-of-service awards

Comet grants length-of-service awards to its employees after a certain number of years of service, in the form of lump-sum payments that increase in amount with the number of years of employment. Comet calculates the resulting obligation using the projected unit credit method. The calculation is updated annually. Any actuarial gains or losses from the remeasurement are immediately taken to income.

Share-based payments

Part of the variable compensation of the members of the Executive Committee under the short-term incentive plan (STIP), and part of the fixed compensation of the Board of Directors, is paid in stock. In addition, the Executive Committee is granted stock under a long-term incentive plan (LTIP). The expense is recognized at the value of the stock earned, measured at the quoted market price (fair value) at the grant date. The amount accrued for those components of compensation which must be equity-settled (i.e., for which there is no option of cash payment) is recognized directly in equity. For components which the beneficiary can choose to receive in equity or in cash, the value of the option which this choice represents is determined and recognized as an increase in equity, while the rest of the obligation is recorded as a liability.

Income tax

The income tax expense for the reporting period is composed of current taxes and deferred taxes.

Current taxes

Current tax liabilities and assets for the current period and prior reporting periods are recognized based on the amount expected to be payable to or refunded by the tax authorities. They are calculated based on the tax regulations and tax rates in effect at the balance sheet date.

Deferred taxes

Deferred taxes are accounted for by the liability method. Under this approach, the income tax effects of temporary differences between the tax bases and the values used in the consolidated financial statements are recorded as non-current liabilities or non-current assets. Deferred taxes are calculated at actual or expected local tax rates. Changes in deferred taxes are included in income tax expense in the income statement, except for deferred taxes in respect of items that are recognized outside profit or loss. These latter deferred taxes are likewise recognized outside profit or loss; according to the underlying accountable event, they are recognized either in other comprehensive income or directly in equity. Deferred tax liabilities are recognized on all taxable temporary differences except for goodwill. Deferred tax assets are recognized for all deductible temporary differences, the carryforward of unused tax credits and any unused tax losses. Deferred tax assets are recognized to the extent that it is probable that taxable profit will be available against which the deductible temporary differences and the carryforward of unused tax credits and unused tax losses can be utilized, except:

- When the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit for the period nor taxable profit or loss.
- In respect of deductible temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future.

Impairment of non-current assets

The value of property, plant and equipment and other non-current assets, including intangibles, is reviewed whenever it appears possible, as a result of changed circumstances or events, that the assets' carrying amount represents an overvaluation. In addition, Comet evaluates at year-end whether there are any indications of impairment of non-financial assets. Intangible assets that are in the process of being generated are tested for impairment annually. If the carrying amount exceeds the amount recoverable through use or sale of the asset, the carrying amount is reduced to this recoverable amount and the difference is recorded as an impairment charge in the income statement. The recoverable amount is the higher of realizable value or value in use. Value in use is determined on the basis of discounted expected future cash flows. Any acquired goodwill and any rights to trademarks or names with an indefinite useful life are not amortized but are reviewed annually at the same date for impairment. This impairment test is based on the results for the fiscal year, the rolling multi-quarter forecast and the rolling multi-year plan.

03 Net sales

In the following tables, sales revenue is analyzed by region and by market sector.

In thousands of CHF	Plasma Control Technologies (PCT)		X-Ray Systems (IXS)		Industrial X-Ray Modules (IXM)		Consolidated	
	2022	2021	2022	2021	2022	2021	2022	2021
Geographic region								
Europe	9,710	10,644	26,299	33,936	28,341	32,280	64,350	76,860
North America	184,290	184,871	16,167	13,746	21,487	18,261	221,944	216,879
Asia	187,211	110,263	81,017	81,309	24,133	17,907	292,361	209,479
Rest of world	213	312	6,461	9,381	1,065	811	7,739	10,503
Total net sales	381,424	306,091	129,944	138,371	75,026	69,259	586,395	513,721

Sales split by market sector

In thousands of CHF	2022	2021
PCT		
Semiconductor	358,800	286,329
Others	22,624	19,762
Total, PCT	381,424	306,091
IXS		
Automotive	37,598	51,254
Electronics	58,095	47,276
Science & new materials	17,359	21,836
Aerospace	11,978	13,587
Others	4,915	4,418
Total, IXS	129,944	138,371
IXM		
Non-destructive testing ¹	43,698	39,630
Security	14,551	12,428
Others	16,778	17,202
Total, IXM	75,027	69,259
Total net sales	586,395	513,721

¹ In the year under review the IXM division revised its sales split by market sector. The prior year was adjusted accordingly.

Unsatisfied performance obligations

The unsatisfied or partly unsatisfied performance obligations (so-called order backlog) as of December 31, 2022 amounted to CHF 200 million (prior year: CHF 255 million). Comet will realize this revenue as soon as the performance obligations have been fulfilled and the customers have acquired control of the products or services. This is expected generally to be the case in the next 12 to 24 months.

Contract balances

Opening and closing balances of receivables and contract assets are reported in note 12. Contract liabilities from contracts with customers are presented on the face of the balance sheet. The contract assets consisted mainly of the rights to consideration for product deliveries and services of the X-Ray Systems division that were completed but not yet billed at the balance sheet date. The contract liabilities consisted of prepayments received from customers. The revenue recognized in 2022 from contract liabilities existing at the beginning of the reporting period amounted to CHF 20.3 million (prior year: CHF 33.4 million). Material changes in contract balances result from the receipt of customer payments and the invoicing of satisfied performance obligations.

04 Segment reporting

The Group is managed on the basis of the following three operating divisions, which are delineated based on their products and services. For financial reporting purposes the divisions are also referred to here as "operating segments" or "segments".

- The **Plasma Control Technologies (PCT)** division develops, manufactures and markets vacuum capacitors, radio frequency (RF) generators and RF impedance matching networks for the high-precision control of plasma processes required, for instance, in the production of memory chips and flat panel displays.
- The **X-Ray Systems (IXS)** division develops, manufactures and markets x-ray systems, and provides related services, for non-destructive examination using x-ray and microfocus technology and computed tomography.
- The **Industrial X-Ray Modules (IXM)** division develops, manufactures and markets highly compact x-ray sources and portable x-ray modules for non-destructive examination, steel metrology, and security inspection.

Segment operating income represents all revenues and expenses attributable to a particular division. The only revenues and expenses not allocated to the segments are those of Comet Holding AG, as well as financing income, financing expenses and income taxes. These unallocated expenses and revenues are reported in the "Corporate" column. Transactions between the segments are invoiced at prices also charged to third parties.

The segment assets and liabilities represent all operating items. The following assets and liabilities are not allocated to operating segments: the assets and liabilities of Comet Holding AG, all cash and cash equivalents, all debt and all income tax assets and liabilities. These unallocated assets and liabilities are reported in the "Corporate" column.

04.1 Operating segments

Fiscal year 2022						
In thousands of CHF						
	Plasma Control Technologies (PCT)	X-Ray Systems (IXS)	Industrial X-Ray Modules (IXM)	Elimination of intersegment activity	Corporate	Consolidated
Net sales						
External net sales	381,424	129,944	75,026	—	—	586,395
Intersegment sales	—	407	13,616	(14,023)	—	—
Total net sales	381,424	130,351	88,643	(14,023)	—	586,395
Segment operating income	94,497	(3,104)	10,868	(1,227)	—	101,033
Unallocated costs	—	—	—	—	(2,059)	(2,059)
Operating income	94,497	(3,104)	10,868	(1,227)	(2,059)	98,975
Interest income						440
Interest (expenses)						(1,715)
Net gains or (losses) on derivative fair value						(192)
Net gains or (losses) on foreign exchange						(2,140)
Income before tax						95,368
Income tax						(17,259)
Net income						78,109
EBITDA	104,915	1,607	15,677	(1,227)	(2,059)	118,913
EBITDA in % of net sales	27.5%	1.2%	17.7%			20.3%
Assets and liabilities at Dec. 31, 2022						
Segment assets	216,730	103,496	88,108	—	148,467	556,801
Segment liabilities	(75,364)	(53,689)	(17,222)	—	(78,994)	(225,269)
Net assets	141,365	49,807	70,886	—	69,473	331,532
Other segment information						
Additions to right-of-use asset	20,714	1,558	239	—	—	22,511
Additions to property, plant and equipment & intangible assets	16,958	2,384	3,412	—	—	22,753
Depreciation, amortization and impairment	10,419	4,711	4,809	—	—	19,939
Change in provisions	(318)	1,509	(166)	—	—	1,026
Other non-cash expense or (income)	(345)	93	4	58	24	(166)
Number of employees at year-end	998	430	335	—	—	1,763

Fiscal year 2021

In thousands of CHF

	Plasma Control Technologies (PCT)	X-Ray Systems (IXS)	Industrial X-Ray Modules (IXM)	Elimination of intersegment activity	Corporate	Consolidated
Net sales						
External net sales	306,091	138,371	69,259	—	—	513,721
Intersegment sales	—	535	9,687	(10,222)	—	—
Total net sales	306,091	138,906	78,946	(10,222)	—	513,721
Segment operating income	71,864	3,634	10,548	294	—	86,340
Unallocated costs	—	—	—	—	(2,255)	(2,255)
Operating income	71,864	3,634	10,548	294	(2,255)	84,085
Interest income						222
Interest (expenses)						(1,544)
Net gains or (losses) on derivative fair value						(495)
Net gains or (losses) on foreign exchange						(60)
Income before tax						82,208
Income tax						(14,771)
Net income						67,437
EBITDA	80,487	8,931	15,292	294	(2,255)	102,749
EBITDA in % of net sales	26.3%	6.4%	19.4%			20.0%
Assets and liabilities at Dec. 31, 2021						
Segment assets	153,907	116,142	85,470	—	134,897	490,415
Segment liabilities	(50,890)	(75,497)	(20,290)	—	(68,757)	(215,435)
Net assets	103,017	40,645	65,180	—	66,140	274,981
Other segment information						
Additions to right-of-use asset	1,165	861	1,597	—	—	3,623
Additions to property, plant and equipment & intangible assets	6,586	1,870	3,011	—	—	11,467
Depreciation, amortization and impairment	8,622	5,297	4,744	—	—	18,663
Change in provisions	262	(1,887)	77	—	—	(1,549)
Other non-cash expense or (income)	(203)	(293)	(47)	24	400	(119)
Number of employees at year-end	826	435	310	—	—	1,571

Reconciliation of aggregate segment assets and liabilities to consolidated results

In thousands of CHF	2022	2021
Operating segments' assets	408,334	355,519
Total cash and cash equivalents	125,945	115,533
Other assets	3,718	4,863
Tax receivables	501	2,612
Deferred tax assets	17,940	11,398
Comet Holding AG's receivables from third parties	363	490
Total assets	556,801	490,415
Operating segments' liabilities	(146,276)	(146,678)
Non-current debt	(59,669)	(59,571)
Derivatives used for foreign exchange hedging	(11)	(177)
Tax payables	(17,368)	(7,132)
Deferred tax liabilities	(676)	(676)
Comet Holding AG's payables to third parties	(1,270)	(1,201)
Total liabilities	(225,269)	(215,435)

04.2 Geographic information

Comet markets its products and services throughout the world and has its own companies in Switzerland, Germany, Denmark, the USA, China, Japan, South Korea, Malaysia, Canada and Taiwan. Net sales are allocated to countries on the basis of customer location.

Net sales by region		
In thousands of CHF	2022	2021
Switzerland	6,271	7,918
Germany	26,557	30,887
Rest of Europe	31,522	38,055
Total, Europe	64,350	76,860
Total, North America	221,944	216,879
China	105,848	98,561
Japan	29,500	26,552
Rest of Asia	157,013	84,365
Total, Asia	292,361	209,479
Rest of world	7,739	10,503
Total	586,395	513,721

Property, plant and equipment, right-of-use assets and intangible assets are allocated to the regions based on the country entities' location.

Property, plant and equipment, right-of-use assets and intangible assets by region		
In thousands of CHF	2022	2021
Switzerland	107,764	107,062
Germany	41,127	44,288
North America	35,543	13,428
Rest of world	6,839	6,743
Total	191,273	171,521

04.3 Sales with key accounts

In the year under review, the Plasma Control Technologies division recorded sales of CHF 211 million with its largest customer, which represented 36.1% of Group sales (prior year: CHF 156 million and 30.4%, respectively).

05 Other operating income

In thousands of CHF	2022	2021
Income from the development of prototypes	3,353	2,134
Customers' contributions to development projects	94	327
Government grants	413	128
Miscellaneous income	1,039	1,093
Total other operating income	4,899	3,682

06 Staff costs and staff count

06.1 Staff costs

In thousands of CHF	2022	2021
Wages and salaries	160,286	143,010
Employee benefits	26,244	23,246
Total staff costs	186,530	166,256

06.2 Staff count

	2022	2021
Number of employees at year-end	1,763	1,571
Average full-time equivalents during the year	1,599	1,432

07 Development expenses

Development expenses comprise the costs of new-product development, improvement of existing products, and process engineering. Comet's development activities focus on the fields of vacuum technology, high voltage engineering and material science, and on the further development of the divisions' core products. In view of the uncertainty of future economic benefits that may flow from development projects, Comet as a rule does not capitalize development costs but charges them directly to the income statement.

08 Amortization, depreciation and impairment

In thousands of CHF	2022	2021
Amortization of intangible assets	2,837	3,579
Depreciation of right-of-use assets	5,745	4,765
Depreciation of property, plant and equipment	10,895	10,319
Total amortization and depreciation	19,478	18,663
Impairment of property, plant and equipment	461	—
Total impairment	461	—
Total amortization, depreciation and impairment	19,939	18,663

The impairment of CHF 0.5 million was in relation to planning costs incurred due to a planned building conversion that will not be realized in the near future.

09 Financing income and expenses

In thousands of CHF	2022	2021
Interest income from leases	60	67
Interest income other	380	155
Total interest income	440	222
Interest expense for bond	(879)	(1,053)
Interest expense for leases	(749)	(414)
Interest expense other	(87)	(77)
Total interest expenses	(1,715)	(1,544)
Net interest income or (expenses)	(1,275)	(1,322)
Gains on derivative fair value	1,623	514
Losses on derivative fair value	(1,815)	(1,009)
Net gains or (losses) on derivative fair value	(192)	(495)
Gains on foreign currency translation	8,065	2,493
Losses on foreign currency translation	(10,205)	(2,553)
Net gains or (losses) on foreign currency translation	(2,140)	(60)
Total net financing income or (expense)	(3,607)	(1,877)

Foreign currency translation gains and losses resulted largely from items denominated in US dollars and euros.

10 Income tax**10.1 Current and deferred income tax expense**

In thousands of CHF	2022	2021
Current income tax expense in respect of the current year	26,103	17,904
Current income tax expense/(credit) in respect of prior years	(273)	(1,643)
Deferred income tax expense/(credit)	(8,572)	(1,490)
Total income tax expense	17,259	14,771

10.2 Reconciliation of tax expense

In thousands of CHF	2022	2021
Income before tax	95,368	82,208
Expected income tax at base tax rate of 20.5% (prior year: 22%)	19,550	18,086
Effect of tax rates other than base tax rate	(223)	(231)
Effect of tax relief	(2,310)	(1,060)
Effect of non-tax-deductible expenses	70	88
Effect of change in tax rate on deferred income tax	60	16
Recognition and offset of tax loss carry-forwards not recognized in prior years	68	—
Effect of credits for R&D and domestic manufacturing	(809)	(535)
Effect of income tax from other periods	(273)	(1,643)
Effect of non-refundable withholding tax	667	190
Other effects	355	(141)
Income tax reported in the income statement	17,259	14,771
Effective income tax rate in % of income before tax	18.1%	18.0%

The expected income tax rate represents the Group's experience-based long-term tax rate and takes into account the local income tax rates of the individual Group companies.

Comet AG, based in Flamatt, has been granted conditional tax relief by the canton of Fribourg, Switzerland, in the form of a reduction in cantonal and municipal taxes up to fiscal year 2022. For 2022 the tax reduction amounted to 50% (prior year: 50%).

10.3 Deferred tax assets and liabilities

Deferred tax assets and liabilities can be analyzed as follows:

In thousands of CHF	2022		2021	
	Assets	Liabilities	Assets	Liabilities
Financial instruments	46	(102)	46	(44)
Receivables	727	(698)	2,431	(436)
Inventories	6,656	(516)	5,778	(1,399)
Property, plant and equipment	279	(333)	154	(430)
Right-of-use assets	—	(10,973)	—	(5,616)
Intangible assets	216	(986)	288	(1,976)
Trade payables and other liabilities	716	(108)	572	(328)
Lease liabilities	11,689	—	5,822	—
Accrued expenses	9,097	—	2,630	—
Provisions	1,158	—	1,084	—
Employee benefit plan liabilities	26	(98)	1,499	—
Tax loss carryforwards, and tax credits for R&D and domestic manufacturing	468	—	647	—
Total gross deferred tax of Group companies	31,078	(13,814)	20,951	(10,229)
Netting of deferred tax by Group companies	(13,138)	13,138	(9,553)	9,553
Amounts in the consolidated balance sheet	17,940	(676)	11,398	(676)

The deferred tax assets and liabilities were measured at local tax rates, ranging from 13% to 33%. No deferred tax liabilities were established for temporary differences of CHF 196.2 million (prior year: CHF 141.7 million) in respect of the value of the ownership interests in Group companies. Distributions of retained earnings by subsidiaries are not expected to have an effect on income taxes, except for future distributions from China, Korea, Taiwan and Canada. There were no tax provisions for non-refundable withholding taxes on future distributions of foreign subsidiaries to Comet Holding AG. Distributions by Comet Holding AG to its shareholders have no effect on the reported or future income taxes.

10.4 Movement in deferred tax assets and liabilities

In thousands of CHF	2022	2021
Net asset at January 1	10,722	9,508
Origination and reversal of temporary differences recognized in the income statement	8,345	1,780
Recognition of deferred tax assets on loss carryforwards and R&D credits	227	287
Use of tax loss carryforwards	—	(577)
Deferred tax credit in the income statement	8,572	1,490
Origination and reversal of temporary differences recognized in other comprehensive income	(1,483)	(283)
Foreign currency translation differences	(548)	6
Net asset at December 31	17,264	10,722
Reported as assets	17,940	11,398
Reported as liabilities	(676)	(676)

10.5 Tax loss carryforwards

Deferred tax assets, including tax loss carryforwards and expected tax credits, are recognized only if it is likely that future taxable profits will be available to which these deferred tax assets can be applied. Temporary differences for which no tax assets were recognized were nil (prior year: nil).

At the balance sheet date of December 31, 2022, tax loss carryforwards stood at CHF 3.1 million (prior year: CHF 2.5 million). Including tax credits for R&D and domestic manufacturing, the resulting deferred tax assets were CHF 0.5 million (prior year: CHF 0.6 million). The existing loss carryforwards can be carried forward indefinitely.

In the fiscal year, there were unrecognized deferred tax assets on tax loss carryforwards of CHF 1.1 million (prior year: nil).

11 Earnings per share

Basic earnings per share represents the reporting period's consolidated net income divided by the average number of shares outstanding.

	2022	2021
Weighted average number of shares outstanding	7,772,023	7,768,812
Net income in thousands of CHF	78,109	67,437
Net income per share in CHF, diluted and basic	10.05	8.68

There are no outstanding stock options or stock subscription rights that could lead to a dilution of earnings per share.

12 Trade and other receivables

In thousands of CHF	2022	2021
Trade receivables, gross	79,217	66,007
Impairment of trade receivables	(920)	(950)
Trade receivables, net	78,297	65,057
Refundable sales taxes and value-added taxes	3,482	2,291
Prepayments to suppliers	4,724	1,475
Contract assets ¹	453	1,718
Sundry receivables	2,147	2,151
Total other receivables	10,806	7,635
Total trade and other receivables	89,103	72,692

¹ In the year under review and in the prior year, the IXS division's prepayments from customers in "contract liabilities" were netted with already invoiced contract assets in "trade receivables" (see note 2.3).

The allowance account for impairment of trade receivables showed the following movement:

In thousands of CHF	2022	2021
January 1	950	933
Used	(33)	—
Added	444	92
Released	(418)	(74)
Foreign currency translation differences	(23)	(2)
December 31	920	950

The impairment test of trade receivables performed identified no material change in the risk of default in the year under review.

At the balance sheet date, complete impairment was recognized on CHF 0.6 million (prior year: CHF 0.7 million) of trade receivables. Within the item "total other receivables", there were no amounts past due or written down. The Group does not hold security against trade and other receivables.

The aging schedule for past-due trade receivables on which impairment has been recognized is summarized in the table below:

Fiscal year 2022				
In thousands of CHF	Expected loss rate	Gross carrying amount	Expected credit loss	Net carrying amount
Trade receivables		79,217	920	78,297
Not past due	0.4%	72,937	256	72,681
Over 30 days past due, impairment recognized	0.5%	2,840	13	2,827
Over 60 days past due, impairment recognized	0.8%	1,107	8	1,098
Over 90 days past due, impairment recognized	1.3%	1,015	13	1,003
Over 120 days past due, impairment recognized	1.8%	184	3	181
Over 150 days past due, impairment recognized	55.3% ¹	1,133	627	506

¹ Individual impairment allowances included.

Fiscal year 2021				
In thousands of CHF	Expected loss rate	Gross carrying amount	Expected credit loss	Net carrying amount
Trade receivables		66,007	950	65,057
Not past due	0.3%	59,922	209	59,713
Over 30 days past due, impairment recognized	0.5%	3,133	14	3,118
Over 60 days past due, impairment recognized	0.8%	741	6	736
Over 90 days past due, impairment recognized	1.3%	1,050	13	1,037
Over 120 days past due, impairment recognized	1.8%	124	2	122
Over 150 days past due, impairment recognized	68.0% ¹	1,036	706	331

¹ Individual impairment allowances included.

13 Other assets (including financial assets) and financial liabilities**13.1 Other assets, including financial assets**

In thousands of CHF	2022	2021
Other assets at fair value through profit or loss		
Derivatives used for foreign exchange hedging	634	133
Total other assets at fair value through profit or loss	634	133
Other assets at amortized cost		
Lease receivable	2,548	2,842
Restricted cash – post-combination compensation	371	1,171
Restricted cash – purchase price holdback for warranties	—	718
Other non-current financial assets	576	184
Total other assets at amortized cost	3,495	4,914
Total other assets	4,129	5,047
Total current	1,303	1,925
Total non-current	2,826	3,122

13.2 Other financial liabilities

In thousands of CHF	2022	2021
Other financial liabilities at fair value through profit or loss		
Derivatives used for foreign exchange hedging	11	176
Total other financial liabilities at fair value through profit or loss	11	176
Other financial liabilities at amortized cost		
Liability for purchase price holdback for warranties	—	718
Total other financial liabilities at amortized cost	—	718
Total other financial liabilities	11	894
Total current	11	894

13.3 Derivative financial instruments

At the balance sheet date, open positions in forward exchange contracts were as follows:

In thousands of CHF	2022	2021
USD forward exchange contracts		
Contract amounts	14,723	21,573
Positive fair values	634	129
Negative fair values	—	160
JPY forward exchange contracts		
Contract amounts	—	385
Positive fair values	—	4
CNY forward exchange contracts		
Contract amounts	1,336	502
Negative fair values	11	16

The gains and losses from foreign exchange contracts are recognized as financing income or expense (see note 27). The contract amounts shown represent the notional principal amounts of the forward contracts. Consistent with the nature of the Group's activities, the forward exchange contracts have maturities of less than one year; most are due within six months.

13.4 Other assets at amortized cost

Lease receivables

Lease receivables showed the following movement in 2022:

Lease receivable movement	2022	2021
in thousands of CHF	Lease receivable	Lease receivable
January 1	2,842	1,465
Additions	–	1,688
Accretion of interest	60	66
Lease payments received	(353)	(378)
December 31	2,548	2,842

The maturity analysis of the lease receivable is as follows:

Lease receivable maturity analysis				
In thousands of CHF	2023	2024 – 2027	After 2027	Total lease receivable
Maturity analysis as of December 31, 2022				
Undiscounted lease payments	352	1,407	1,027	2,786
Interest portion	(54)	(149)	(35)	(238)
Lease receivable	298	1,259	991	2,548
	2022	2023 – 2026	After 2026	Total lease receivable
Maturity analysis as of December 31, 2021				
Undiscounted lease payments	412	1,407	1,321	3,141
Interest portion	(61)	(176)	(62)	(299)
Lease receivable	351	1,231	1,259	2,842

Restricted cash

At the time of the acquisition of Object Research Systems (ORS) Inc., an agreement for compensation of CHF 1.5 million in the post-combination period was concluded with key ORS personnel as a separate transaction. An initial purchase price holdback of CHF 1.4 million for warranties regarding acquired software technology was also agreed. For the settlement of these elements, cash was transferred to an escrow account in fiscal year 2020, thus restricting access to these funds.

In December 2021, the first payments to the former shareholders of ORS and key ORS personnel were released. The payments included CHF 0.3 million of post-combination compensation and CHF 0.7 million of purchase price holdback. In fiscal year 2022, further payments were released. The payments included CHF 0.8 million of post-combination compensation and CHF 0.7 million of purchase price holdback. As of

December 31, 2022, the restricted cash amounted to CHF 0.4 million after the payments (prior year: CHF 1.9 million).

13.5 Other financial liabilities at amortized cost

As part of the acquisition of Object Research Systems (ORS) Inc., a purchase price holdback of CHF 1.4 million was agreed for warranties regarding the acquired software technology (also see explanations in note 13.4). In December 2021, a first payment of CHF 0.7 million of purchase price holdback was issued. The remaining amount was released as of December 31, 2022.

14 Inventories

In thousands of CHF	2022	2021
Raw materials and semi-finished products	73,749	46,176
Work in process	12,364	17,111
Finished goods	36,355	35,980
Total inventories	122,468	99,268

The inventory amounts reflect any necessary individual write-downs for items with a market value below manufacturing cost. The expense recognized for inventory write-downs was CHF 2.2 million (prior year: CHF 2.8 million).

Trade restrictions are identified as an additional risk for inventory in stock, especially items which entail US technology and are intended to be sold within the Chinese market. Comet is periodically reviewing all items at risk; no impact was identified as of December 31, 2022.

15 Prepaid expenses

In thousands of CHF	2022	2021
Contract costs	257	539
Other prepaid expenses	5,184	3,730
Total prepaid expenses	5,441	4,269

The contract costs represent capitalized sales commissions for agent activities (incremental costs directly attributable to obtaining a contract). In the fiscal year, sales commissions of CHF 1.8 million were recognized in the income statement (prior year: CHF 2.9 million).

The other prepaid expenses consisted largely of prepayments made for the subsequent fiscal year.

16 Property, plant and equipment

Fiscal year 2022					
In thousands of CHF	Real estate	Plant and equipment	Other tangible assets	Assets under construction	Total property, plant and equipment
Cost					
January 1, 2022	97,991	100,810	18,956	5,688	223,446
Additions	171	2,646	1,773	16,090	20,681
Commissioning of assets under construction	—	4,442	614	(5,056)	(0)
Disposals	—	(1,465)	(1,554)	—	(3,019)
Foreign currency translation differences	—	(727)	(387)	(300)	(1,414)
December 31, 2022	98,162	105,704	19,403	16,423	239,693
Accumulated depreciation and impairment					
January 1, 2022	33,207	65,330	13,205	—	111,743
Additions	2,528	5,830	2,537	—	10,895
Impairment	—	461	—	—	461
Disposals	—	(1,240)	(1,515)	—	(2,755)
Foreign currency translation differences	—	(354)	(264)	—	(618)
December 31, 2022	35,735	70,027	13,963	—	119,725
Carrying amount					
January 1, 2022	64,784	35,479	5,752	5,688	111,703
December 31, 2022	62,427	35,677	5,440	16,423	119,968

Fiscal year 2021					
In thousands of CHF	Real estate	Plant and equipment	Other tangible assets	Assets under construction	Total property, plant and equipment
Cost					
January 1, 2021	97,681	94,593	17,593	7,968	217,834
Acquisition of a subsidiary	—	—	—	—	—
Additions	34	3,539	3,272	3,098	9,943
Commissioning of assets under construction	276	4,231	826	(5,333)	—
Reclassifications	—	33	(33)	—	—
Disposals	—	(1,409)	(2,635)	—	(4,045)
Foreign currency translation differences	—	(176)	(66)	(45)	(287)
December 31, 2021	97,991	100,810	18,956	5,688	223,446
Accumulated depreciation and impairment					
January 1, 2021	30,689	60,998	13,517	—	105,204
Additions	2,518	5,560	2,242	—	10,320
Reclassifications	—	25	(25)	—	—
Disposals	—	(1,289)	(2,475)	—	(3,763)
Foreign currency translation differences	—	36	(54)	—	(18)
December 31, 2021	33,207	65,330	13,205	—	111,743
Carrying amount					
January 1, 2021	66,991	33,595	4,076	7,968	112,629
December 31, 2021	64,784	35,480	5,751	5,688	111,703

Assets pledged or assigned as collateral for Group obligations

At December 31, 2022 and December 31, 2021, all real estate liens (mortgage notes in the amount of CHF 30.0 million) were held within the Group.

17 Right-of-use assets and lease liabilities

The rights of use and liabilities arising from leases showed the following movement:

Fiscal year 2022

In thousands of CHF	Right-of-use assets				Lease liabilities
	Buildings	Equipment	Other assets	Total	
January 1, 2022	18,185	595	10	18,791	19,840
Additions	22,244	267	–	22,511	22,511
Disposals	(1,920)	(5)	–	(1,925)	(1,925)
Depreciation, amortization and impairment	(5,389)	(346)	(10)	(5,745)	–
Accretion of interest	–	–	–	–	749
Repayment of lease liabilities	–	–	–	–	(4,338)
Lease incentive ¹	–	–	–	–	3,530
Payment of interest on lease liabilities	–	–	–	–	(749)
Foreign currency translation differences	(1,209)	(21)	–	(1,230)	(1,420)
December 31, 2022	31,912	490	(0)	32,401	38,197
Reported on the face of the balance sheet as:					
Current lease liability					3,955
Non-current lease liability					34,242

¹ The Landlord agreed to contribute a total of CHF 8.4 million toward the cost of performing the tenant improvements in preparation of Comet's occupancy of the premises. In fiscal year 2022, the "tenant improvement allowance" amounted to CHF 3.5 million.

The non-current lease liabilities largely have remaining maturities of two to ten years. The expected future lease payments are presented in note 28.2.3.

The additions to right-of-use assets and lease liabilities were non-cash items and are thus not included in cash flow from investing activities.

Fiscal year 2021

In thousands of CHF	Right-of-use assets				Lease liabilities
	Buildings	Equipment	Other assets	Total	
January 1, 2021	19,973	626	11	20,610	21,842
Acquisition of a subsidiary	–	–	–	–	–
Additions	3,236	378	9	3,623	3,623
Disposals	(36)	(0)	–	(36)	(36)
Depreciation, amortization and impairment	(4,372)	(383)	(10)	(4,765)	–
Accretion of interest	–	–	–	–	414
Repayment of lease liabilities	–	–	–	–	(4,927)
Payment of interest on lease liabilities	–	–	–	–	(414)
Foreign currency translation differences	(616)	(26)	0	(642)	(662)
December 31, 2021	18,185	595	10	18,791	19,840
Reported on the face of the balance sheet as:					
Current lease liability					3,949
Non-current lease liability					15,891

The composition of the lease expenses in fiscal 2022 and 2021 is shown below:

In thousands of CHF	2022	2021
Depreciation, amortization and impairment	5,745	4,765
Interest expenses	749	414
Expenses for short-term leases and other items	449	59
Expense for low-value leases	12	7
Expense for variable lease payments not included in the measurement of lease liabilities	2	33
Total lease expenses	6,956	5,277

Comet has lease agreements containing extension and termination options (see note 2.5). At December 31, 2022, all options either deemed highly likely to be exercised or not to be exercised were taken into account in the valuation of the lease liabilities.

The undiscounted payments of options that were not exercised as at December 31, 2022 amounted to CHF 1.4 million due within the subsequent five years (prior year: CHF 3.0 million) and to CHF 28.6 million for option periods of more than five years (prior year: CHF 9.1 million).

18 Intangible assets

Fiscal year 2022						
In thousands of CHF						
	Goodwill and trademarks	Customer lists	Technology	Software	Other intangible assets	Total intangible assets
Cost						
January 1, 2022	31,547	21,210	5,032	26,237	164	84,190
Additions	—	—	—	1,949	124	2,072
Disposals	—	—	—	(157)	—	(157)
Foreign currency translation differences	(1,097)	(790)	(215)	(360)	(3)	(2,464)
December 31, 2022	30,450	20,421	4,817	27,669	285	83,641
Accumulated amortization						
January 1, 2022	1	18,861	2,413	21,837	50	43,163
Additions	1	870	366	1,557	44	2,837
Disposals	—	—	—	(157)	—	(157)
Foreign currency translation differences	(0)	(707)	(115)	(283)	(1)	(1,106)
December 31, 2022	2	19,024	2,664	22,954	93	44,737
Carrying amount						
January 1, 2022	31,545	2,349	2,619	4,400	114	41,027
December 31, 2022	30,447	1,397	2,153	4,715	192	38,904

The categories "goodwill and trademarks", "customer lists" and "technology" were capitalized in connection with business combinations.

Comet is following a long-term brand strategy. To leverage the strength of the established Comet brand and Yxlon brand even better, a re-branding took place in fiscal year 2022 to create the "Comet Yxlon" brand. Comet deems the capitalized, existing standalone Yxlon

brand to have an indefinite useful life, as Yxlon remains an important registered brand.

Fiscal year 2021

In thousands of CHF

	Goodwill and trademarks	Customer lists	Technology	Software	Other intangible assets	Total intangible assets
Cost						
January 1, 2021	32,385	21,730	5,023	25,222	122	84,482
Acquisition of a subsidiary	(67)	—	—	—	—	(67)
Additions	—	—	—	1,473	52	1,525
Disposals	—	—	—	(92)	(9)	(101)
Foreign currency translation differences	(772)	(519)	9	(365)	(1)	(1,649)
December 31, 2021	31,547	21,210	5,032	26,237	164	84,190
Accumulated amortization						
January 1, 2021	0	17,996	2,012	20,578	34	40,620
Additions	1	1,426	494	1,632	26	3,579
Disposals	—	—	—	(92)	(9)	(101)
Foreign currency translation differences	—	(560)	(93)	(280)	(1)	(934)
December 31, 2021	1	18,861	2,413	21,837	50	43,163
Carrying amount						
January 1, 2021	32,385	3,734	3,012	4,644	88	43,862
December 31, 2021	31,545	2,349	2,619	4,400	114	41,027

19 Impairment test of goodwill and intangible assets with indefinite useful lives

The impairment test for goodwill and other intangible assets with indefinite useful lives was performed as at October 31, 2022. For the purpose of the impairment test, the assets to be tested were allocated to and measured as the following two cash generating units, at the level of the IXS division and (within the IXM division) at the level of the IXT business unit:

- X-Ray Systems (IXS), as the relevant cash generating unit for all activities of the historically acquired Yxlon group and for the FeinFocus product group, with the exception of the generator business;
- Industrial X-Ray Technology (IXT), for the generator business acquired as part of the acquisition of Yxlon.

The impairment test is based on the value in use method. The recoverable amount is determined from the present value of the future cash flows (DCF valuation). The calculations are based on the Board-approved rolling forecast current at the time of the impairment test, and on the Board-approved rolling medium-term plan for 2023 to 2025. Using experience-based estimates, the amounts in the forecast and in the medium-term plan are based on growth projections for net sales, operating income and other parameters, taking into consideration the estimated market trends in the various regions. Cash flows beyond the forecast period are extrapolated using an assumed growth rate of 1.5%, which is within the expected rate of market growth. The assumptions applied in determining value in use correspond to the expected long-term average growth rate of the X-Ray Systems division's operating business and of the generator business of Industrial X-Ray Modules. Input variables with a critical impact on the outcome of the impairment test are the assumed rates of sales growth and the projected trend in operating income.

Carrying amount of the assets tested

	X-Ray Systems (IXS) CGU		Industrial X-Ray Technology (IXT) CGU		Total	
In thousands of CHF	2022	2021	2022	2021	2022	2021
Goodwill	21,593	22,601	6,873	6,873	28,467	29,475
Trademarks (Yxlon)	1,980	2,071	—	—	1,980	2,071
Total carrying amount	23,573	24,672	6,873	6,873	30,447	31,545

Assumptions applied in the valuation model

	X-Ray Systems (IXS) CGU			Industrial X-Ray Technology (IXT) CGU		
	YoY movement in %	2022	2021	YoY movement in %	2022	2021
Discount rate (WACC) before tax	1.8%	12.1%	10.3%	1.1%	12.4%	11.2%
Growth rate of terminal value	0.0%	1.5%	1.5%	0.0%	1.5%	1.5%

Sensitivities to the assumptions applied in the valuation model

The measurement of the values in use of the X-Ray Systems CGU (IXS) and the Industrial X-Ray Technology CGU (IXT) is sensitive to the following assumptions in the planning period (2023 to 2025):

- Growth assumptions: Sales revenue is projected by product group and market segment. Based on the recovering situation of 2022 as the starting point, the average annual rate of sales growth is assumed to be 22.2% for IXS (prior year: 9.5%) and 20.8% for IXT (prior year: 16.2%).
- Gross margins: Gross margins in the medium term are expected to average approximately 42.7% for IXS (prior year: 39.7%) and 51.6% for IXT (prior year: 50.3%). Target achievement also depends in part on the trend in the purchasing prices of materials.
- Foreign exchange rates: The movement in exchange rates between the Swiss franc and the euro and US dollar has an effect on company value. The forecasts are based on October 2022 exchange rates.
- Discount rate (WACC): The capital costs were determined based on borrowing costs (before tax) and on the long-term risk-free rate, a small-cap premium, and a market risk premium weighted by a Comet-specific beta factor.

No impairment was recognized in the year under review and Comet believes that, with a realistic change in the material assumptions, the recoverable amount would not fall below the carrying amount.

20 Debt

The bond maturing on April 20, 2021 was repaid and refinanced using a new bond issued by Comet Holding AG on April 20, 2021 in the amount of CHF 60 million. The bond was issued at par. The term of the bond is five years and it matures on April 20, 2026. The fixed coupon rate over the term is 1.30%, payable annually on April 20. The bond is listed on the SIX Swiss Exchange (Swiss security number 110 109 656, ticker symbol COT21).

At the end of the fiscal year under review, Comet had undrawn uncommitted credit facilities of CHF 56.2 million (prior year: CHF 57.3 million). Of this total, CHF 1.7 million (prior year: CHF 3.8 million) was reserved for hedging transactions and bank guarantees.

20.1 Movement in debt

Fiscal year 2022						
In thousands of CHF	Jan. 1, 2022	Cash flows	Reclassif. from non-current to current	Unwinding of discount, and remeasurement	Foreign currency translation differences	Dec. 31, 2022
Non-current debt	59,571	—	—	98	—	59,669
Total debt	59,571	—	—	98	—	59,669

Fiscal year 2021						
In thousands of CHF	Jan. 1, 2021	Cash flows	Reclassif. from non-current to current	Unwinding of discount, and remeasurement	Foreign currency translation differences	Dec. 31, 2021
Current debt	59,976	(60,000)	—	24	—	—
Non-current debt	—	59,503	—	68	—	59,571
Total debt	59,976	(497)	—	93	—	59,571

21 Trade and other payables

In thousands of CHF	2022	2021
Trade payables	31,191	26,095
Sundry payables	5,903	5,428
Sales commissions	2,809	3,593
Total financial liabilities	39,903	35,116
Sales tax and value-added tax	1,014	1,321
Total other payables	1,014	1,321
Total trade and other payables	40,917	36,437

22 Accrued expenses

In thousands of CHF	2022	2021
Accrued staff costs	24,475	21,256
Other accrued expenses	17,713	14,460
Total accrued expenses	42,188	35,716

Accrued staff costs consist mainly of the amount accrued for performance-based compensation, and employees' vacation and overtime credits. The item "other accrued expenses" relates to outstanding invoices and payables of the fiscal year.

23 Provisions

Fiscal year 2022			
In thousands of CHF			
	Warranties	Other provisions	Total provisions
January 1, 2022	6,137	873	7,010
Added	8,722	771	9,493
Used	(6,733)	(88)	(6,821)
Released	(1,600)	(47)	(1,647)
Foreign currency translation differences	(46)	(61)	(107)
December 31, 2022	6,480	1,448	7,929
Of which:			
January 1, 2022			
Current provisions	6,137	605	6,743
Non-current provisions	—	267	267
December 31, 2022			
Current provisions	6,480	475	6,955
Non-current provisions	—	973	973

The provision for warranties covers the risk of expenses for defects that have not occurred to date, but could potentially occur until the end of the warranty periods. Warranty provisions are measured based on historical experience.

24 Employee benefits

24.1 Employee benefit plan liabilities

The employee benefit plan liabilities of the Group are summarized in the following table.

In thousands of CHF	2022	2021
Defined benefit liability in Switzerland	—	10,806
Defined benefit liability in Germany	308	776
Total defined benefit liability	308	11,582
Provision for length-of-service awards	1,399	1,415
Total employee benefit plan liabilities	1,707	12,997

24.2 Defined benefit plans

Comet maintains defined benefit pension plans in Switzerland and Germany. These plans differ according to their particular purpose and are based on the legal requirements in the respective countries.

Switzerland

The defined benefit plans are managed within a collective foundation. This is a separate legal entity falling under the Swiss Federal Act on Occupational Retirement, Survivors' and Disability Pensions (the BVG). The pension fund maintains a main ("base") plan for employees that provides the legally required benefits, and a supplemental plan that provides benefits in respect of pay components above the statutory range. Both plans are managed under a fully insured pension model and thus, all investment risk is carried by the pension fund, or ultimately by the insurer. The plans are administered by the collective foundation, which is in the form of a foundation organized by an insurance company. The pension fund is managed by the foundation's board of directors, which is composed of equal numbers of employee and employer representatives and is required to act in the interests of the plan participants.

Plan participants are insured against the financial consequences of old age, disability and death. The benefits are specified in a set of regulations. Minimum levels of benefits are prescribed by law. Contribution levels are set as a percentage of the insured portion of employees' pay. The retirement benefit is calculated as the retirement pension asset existing at the time of retirement, multiplied by the conversion rate specified in the regulations. Plan participants can opt to receive their principal as a lump sum instead of drawing a pension. The supplemental plan as a rule pays out a lump sum. The amounts of the disability and survivor pensions are defined as a percentage of insured pay.

Germany

In Germany there is a closed plan with pension commitments which no longer has active participants. The obligations in respect of current pension payments and deferred pensions are recognized in the balance sheet.

Principal actuarial assumptions

	Switzerland		Germany	
	2022	2021	2022	2021
Discount rate at January 1	0.30%	0.15%	0.80%	0.40%
Discount rate at December 31	2.20%	0.30%	3.60%	0.80%
Expected rate of salary increases	1.50%	1.00%	–	–
	BVG 2020	BVG 2020	Heubeck	Heubeck
Life tables used as basis for life expectancies	GT	GT	2018 GT	2018 GT

Movement in present value of defined benefit obligation, in plan assets and in net carrying amount for defined benefit plans

Fiscal year 2022

In thousands of CHF

	Present value of defined benefit obligation	Fair value of plan assets	Net carrying amount recognized in balance sheet
January 1	(79,329)	67,747	(11,582)
Current service cost	(3,493)	–	(3,493)
Past service cost	605	–	605
Administration cost, excl. cost of managing plan assets	(39)	–	(39)
Current service cost	(2,928)	–	(2,928)
Interest (expense) or income	(257)	219	(39)
Defined benefit cost recognized in the income statement	(3,185)	219	(2,966)
Return on plan assets, excluding interest income	–	123	123
Actuarial gain arising from changes in financial assumptions	16,020	–	16,020
Actuarial loss arising from changes in demographic assumptions	(227)	–	(227)
Actuarial loss arising from experience adjustments	(4,949)	–	(4,949)
Effect of asset ceiling under IAS 19.57(b)	–	(81)	(81)
Defined benefit cost recognized in other comprehensive income	10,844	42	10,886
Benefits paid-in/deposited	(1,277)	1,298	20
Employee contributions	(2,466)	2,466	–
Employer contributions	–	3,305	3,305
Foreign currency translation differences	73	(44)	29
December 31	(75,341)	75,032	(308)
Reported on the face of the balance sheet as:			
An asset			–
A liability			(308)

The actuarial gain arising from changes in financial assumptions was mainly attributable to the increase in the discount rate and, as an off-setting effect, the increase in expected salary increases.

The actuarial loss arising from experience adjustments represents the change that is not attributable to changes in assumptions. This relates in particular to the difference between the actuarial assumptions in the prior year and the actual outcomes with regard to the entry and exit of insured employees, effective salary adjustments, death and disability of insured persons, and retirements.

The board of directors of the pension fund decided in April 2022 to further reduce the pension conversion rates with effect from the year 2024. Under IAS 19, these plan amendments led to a negative past service cost (i.e., they resulted in income) and a corresponding reduction in the defined benefit obligation with a positive pre-tax effect of CHF 0.6 million.

The board of directors of the pension fund decided in March 2021 to reduce the pension conversion rates with effect from the year 2022 and 2023. Under IAS 19, these plan amendments led to a negative past service cost (i.e., they resulted in income) and a corresponding reduction in the defined benefit obligation with a positive pre-tax effect of CHF 0.5 million.

The average duration of the defined benefit obligation was 9.7 years.

Fiscal year 2021

In thousands of CHF

	Present value of defined benefit obligation	Fair value of plan assets	Net carrying amount recognized in balance sheet
January 1	(76,823)	63,484	(13,340)
Current service cost	(3,482)	—	(3,482)
Past service cost	545	—	545
Administration cost, excl. cost of managing plan assets	(37)	—	(37)
Current service cost	(2,974)	—	(2,974)
Interest (expense) or income	(169)	101	(68)
Defined benefit cost recognized in the income statement	(3,143)	101	(3,042)
Return on plan assets, excluding interest income	—	310	310
Actuarial gain arising from changes in financial assumptions	746	—	746
Actuarial gain arising from changes in demographic assumptions	1,786	—	1,786
Actuarial loss arising from experience adjustments	(889)	—	(889)
Defined benefit cost recognized in other comprehensive income	1,644	310	1,954
Benefits paid-in/deposited	1,015	(996)	19
Employee contributions	(2,107)	2,107	—
Employer contributions	—	2,790	2,790
Foreign currency translation differences	86	(50)	36
December 31	(79,329)	67,747	(11,582)
Reported on the face of the balance sheet as:			
An asset			—
A liability			(11,582)

Key figures by country

	Switzerland		Germany	
In thousands of CHF	2022	2021	2022	2021
Present value of defined benefit obligation	(74,076)	(77,525)	(1,264)	(1,804)
Fair value of plan assets	74,157	66,719	956	1,028
Effect of asset ceiling under IAS 19.57(b)	(81)	—	—	—
Net carrying amount recognized in the balance sheet	—	(10,806)	(308)	(776)
Defined benefit cost recognized in the income statement	(2,960)	(3,038)	(6)	(4)
Defined benefit cost recognized in other comprehensive income	10,461	1,890	425	64

The employer contributions to the plans in Switzerland for fiscal year 2023 are expected to amount to CHF 3.4 million.

Major categories of plan assets

In thousands of CHF	2022	2021
Assets from insurance contract	75,032	67,747
Total plan assets without a quoted market price	75,032	67,747

As the base plan and the supplemental plan are managed under a fully insured model, all investment risk is carried by the pension fund, or ultimately by the insurer. The plan assets are therefore reported as the item "assets from insurance contract".

Companies of the Group do not make loans to the pension plans and do not utilize any real estate held by the plans.

Sensitivities

The following table presents an analysis of how the reported present value of the defined benefit obligation would change in response to hypothetical changes in the actuarial assumptions.

Sensitivity of present value of defined benefit obligation to different scenarios

	Switzerland		Germany	
In thousands of CHF	2022	2021	2022	2021
Discount rate: 0.25% decrease	75,884	79,861	1,296	1,749
Discount rate: 0.25% increase	72,378	75,339	1,233	1,859
Expected rate of salary growth: 0.25% decrease	74,057	77,405	1,264	1,803
Expected rate of salary growth: 0.25% increase	74,080	77,633	1,264	1,803
Life expectancy: 1-year increase	74,535	78,282	1,324	1,889
Life expectancy: 1-year decrease	73,619	76,770	1,204	1,717

24.3 Defined contribution plans

The contributions paid to defined contribution plans in the fiscal year amounted to CHF 7.7 million (prior year: CHF 6.8 million).

24.4 Length-of-service awards

Comet grants length-of-service awards to its employees after a certain number of years of service, in the form of lump-sum payments that increase in amount with the number of years of employment. The provision for this item changed as follows in the year under review:

In thousands of CHF	2022	2021
Provision at January 1	1,415	1,468
Current service cost	253	184
Interest cost	6	4
Benefits paid	(185)	(188)
Actuarial losses or (gains)	(78)	(10)
Changes in scope of consolidation ¹	25	—
Foreign currency translation differences	(37)	(43)
Provision at December 31	1,399	1,415

¹ In the reporting period, length-of-service award policies were rolled out in two subsidiaries.

25 Equity capital structure and shareholders

25.1 Capital stock

The capital stock at January 1, 2022 was CHF 7,769,534, divided into 7,769,534 registered shares with a par value of CHF 1.00 per share.

In fiscal year 2022 the capital stock was increased by 4,432 shares from the portion of authorized capital designated for equity-based compensation. Including the increase of 4,432 shares from this portion of authorized capital, Comet Holding AG at December 31, 2022 thus had a new total of CHF 7,773,966 of capital stock, divided into 7,773,966 registered shares with a par value of CHF 1.00 per share. The capital stock is fully paid in.

At its meeting on June 10, 2022 the Board of Directors established that the capital increase from authorized capital for equity-based compensation was properly performed. The information in the commercial register, and the Articles of Association of Comet Holding AG, were updated to reflect the change in capital stock.

	2022		2021	
	Number of shares	Par value in CHF	Number of shares	Par value in CHF
January 1	7,769,534	7,769,534	7,767,887	7,767,887
Increase in capital from the portion of authorized capital designated for equity compensation	4,432	4,432	1,647	1,647
December 31	7,773,966	7,773,966	7,769,534	7,769,534

At the balance sheet date, Comet Holding AG held no treasury stock (prior year: nil).

25.2 Authorized capital for equity compensation

Under article 3b of its Articles of Association, a portion of the Company's unissued authorized capital is designated for use only as equity-based compensation (in German this portion is known as "bedingtes Aktienkapital"). In such a capital increase, stock is issued to Executive Committee members and/or Board members of Comet Holding AG. With respect to this portion of authorized capital, the other shareholders' pre-emptive rights are excluded. The issuance of stock or stock subscription rights is based on a compensation plan (in the form of a written regulation) adopted by the Board of Directors.

In May 2022, in accordance with the compensation plan, the members of the Board of Directors were granted a total of 500 shares of stock in payment of CHF 131,930 of fixed retainers due for fiscal year 2021. In addition, as part of their compensation for 2022, the members of the Board of Directors were granted a total of 250 shares in payment of CHF 65,965 of fixed retainers due for the period from January 1, 2022 to the 2022 Annual Shareholder Meeting. The fully paid shares were applied to the retainers due at a price of CHF 263.86 per share.

Members of the Executive Committee were granted a total of 3,682 shares in payment of CHF 973,557 of profit-sharing compensation due for fiscal year 2021. The fully paid shares were applied to the compensation due at a price of CHF 263.86 per share.

The shares are issued at the applicable stock price at the time of issuance, which may differ from the above-mentioned allotment price. As a result of these grants of a total of 4,432 shares made in 2022, the Company's unissued authorized capital for equity-based compensation showed the following movement:

	2022		2021	
	Number of shares	Par value in CHF	Number of shares	Par value in CHF
January 1	193,586	193,586	195,233	195,233
Increase in capital (awards to Board of Directors for prior term's retainer and to Executive Committee for prior year's profit-sharing compensation)	(4,432)	(4,432)	(1,647)	(1,647)
December 31	189,154	189,154	193,586	193,586

At the end of the year, the remaining unissued authorized capital for equity-based compensation was CHF 189,154, or 2.4% of the existing capital stock.

25.3 Significant shareholders

At December 31, 2022 the Company, according to disclosure notifications, had the following significant shareholders (defined for this purpose as shareholders with voting rights representing 3% or more of the Comet capital stock recorded in the Swiss commercial register of companies):

Beneficial owner	Direct shareholder	Share of voting rights as disclosed by shareholders
Pictet Asset Management SA (Direction de Fonds)		5.27%
UBS Fund Management (Switzerland AG)		5.23%
Credit Suisse Funds AG		3.22%
Ruth Wertheimer	7-Industries Holding B.V.	3.13%

The Company has not been notified of any other shareholders that held 3% or more of its shares. To the best of the Company's knowledge, there were no voting pool agreements.

26 Off-balance sheet transactions

26.1 Contingent asset

Comet Technologies USA Inc., Comet AG and Comet Yxlon GmbH (collectively, "Comet") filed a lawsuit in the U.S. District Court for the Northern District of California asserting that XP Power LLC ("XP") improperly acquired and used Comet trade secrets relating to its radio frequency matching network and generator technologies. A jury trial began on March 14, 2022 and on March 23, 2022, the jury found in favor of Comet, awarding it USD 20 million in compensatory damages and USD 20 million in punitive damages for a total of USD 40 million in monetary damages. On September 30, 2022, Comet was awarded an injunction preventing XP from developing, marketing or selling any product derived from the misappropriated Comet trade secrets. Comet is also eligible to recover from XP certain legal expenses related to the lawsuit; the value of such recovery was unknown as of December 31, 2022. XP is challenging the monetary and non-monetary awards through post-trial motions. Based on the current status of the lawsuit, the final outcome and award amount remained uncertain and the potential award was therefore considered a contingent asset at the end of fiscal year 2022.

On or about December 9, 2022, XP secured a USD 48.4 million bond to stay enforcement of the current judgment through the outcome of an appeal to the U.S. Court of Appeals for the Ninth Circuit. XP may file its motion for appeal once post-trial motions are resolved. Based on the current status of the lawsuit, the amount of Comet's award was still classified as a contingent asset as of December 31, 2022.

26.2 Contingent liabilities

With respect to the XP Power lawsuit, Comet has agreed to a contingent success fee with its legal advisors in the form of a percentage of monetary and non-monetary recovery. The success fee is payable if and when Comet actually receives the recovery, which will happen upon a successful (i) full and final resolution of all post-trial motions and any subsequent appeal or (ii) resolution of the lawsuit via executed settlement agreement. Based on the current status of the lawsuit, the final outcome and award amount remained uncertain as of December 31, 2022 and the success fee was therefore considered to be a contingent liability.

As a global company, Comet is exposed to numerous legal risks. These can include, especially, risks relating to product liability, trade secret misappropriation, patent law, export regulations, tax law and competition law. The outcomes of currently pending and future legal proceedings cannot be predicted with certainty and may thus have adverse or positive effects on the business trajectory and on future financial results.

Provisions are established inasmuch as the financial consequences of a past event can be estimated reliably and the estimate can be confirmed by independent expert opinion. Contingent liabilities that are likely to result in an obligation are included under provisions.

26.3 Other off-balance sheet obligations

As part of its operating activities, Comet had purchase obligations at the balance sheet date totaling CHF 63.2 million (prior year: CHF 37.9 million), of which CHF 27.8 million were current in nature (prior year: CHF 20.3 million) and CHF 35.4 million mature in the five-year period that begins in 2023 (prior year: CHF 17.6 million). The payment obligations arise from off-balance sheet offtake agreements with suppliers, most of which are set out in master agreements.

There were no investment or capital commitments at December 31, 2022 (prior year: nil).

27 Financial instruments

27.1 Classes of financial instruments

Fiscal year 2022

In thousands of CHF

	Note	Financial assets		Financial liabilities		Fair value
		FVTPL ¹	At amortized cost	FVTPL ¹	At amortized cost	
Cash and cash equivalents		—	125,945	—	—	*
Trade and other receivables, net	12	—	80,444	—	—	*
Derivatives	13	634	—	11	—	623
Other assets – financial assets, excluding derivatives	13	—	3,124	—	—	*
Trade and other payables	21	—	—	—	39,903	*
Liability for purchase price holdback for warranties	13	—	—	—	—	*
Lease liabilities	17	—	—	—	38,197	*
Non-current debt, fixed rate	20	—	—	—	59,669	58,800
Total		634	209,513	11	137,768	
Interest income or (expense)	9	440		(1,715)		
Gain or (loss) on derivatives	9		1,623		(1,815)	
Change in impairment and losses on trade receivables	12	—	30	—	—	
Total net gain or (loss) recognized in the income statement		440	1,653	(1,715)	(1,815)	

¹ At fair value through profit or loss.

* The carrying amount approximates fair value.

Fiscal year 2021

In thousands of CHF

	Note	Financial assets		Financial liabilities		Fair value
		FVTPL ¹	At amortized cost	FVTPL ¹	At amortized cost	
Cash and cash equivalents		—	115,533	—	—	*
Trade and other receivables, net	12	—	67,208	—	—	*
Derivatives	13	133	—	176	—	(44)
Other assets – financial assets, excluding derivatives	13	—	3,744	—	—	*
Trade and other payables	21	—	—	—	35,116	*
Liability for purchase price holdback for warranties	13	—	—	—	718	*
Lease liabilities	17	—	—	—	19,840	*
Non-current debt (fixed rate)	20	—	—	—	59,571	62,820
Total		133	186,484	176	115,244	
Interest income or (expense)	9	—	222	—	(1,544)	
Gain or (loss) on derivatives	9	514	—	(1,009)	—	
Change in impairment and losses on trade receivables	12	—	(17)	—	—	
Total net gain or (loss) recognized in the income statement		514	205	(1,009)	(1,544)	

¹ At fair value through profit or loss.

* The carrying amount approximates fair value.

IFRS require all financial instruments which are held at fair value, and all reported fair values, to be categorized into three classes (or "levels") according to whether the fair values are based on quoted prices in active markets (Level 1), on models using other observable market data (Level 2), or on models using unobservable inputs (Level 3).

The only financial instruments that Comet recognized at fair value are derivatives held for currency hedging. The measurement of the derivatives falls into Level 2 of the fair value measurement hierarchy under IFRS 13.

27.2 Fair values of financial instruments

The only differences between fair values and carrying amounts occurred for the CHF 60 million bond, where the quoted market price is used as the fair value (Level 1). As of December 31, 2022 the bond is presented under non-current debt, fixed rate (prior year: presented under non-current debt, fixed rate).

28 Financial risk management

Comet operates internationally through its own subsidiaries, as well as exports to other countries. As such, the Group is subject to various financial risks that arise in relation to underlying business activities.

The Group's financial risk management is centralized through its Treasury function with Comet's Board of Directors having overall responsibility for the establishment and oversight of the Treasury risk management framework. The key elements of risk management form an integral part of Group strategy. Clearly defined management information and control systems are used to measure, monitor and control risks.

Comet seeks to avoid unreasonable financial risks and to mitigate risks through appropriate hedges, and does not enter into derivative financial instruments for speculative purposes.

28.1 Capital management

The primary goal of capital management is to optimize its equity and debt balances in order to sustain the future development of the business and maximize shareholder value.

Comet manages the Group's capital structure to meet liquidity requirements and pursue growth opportunities and profitability targets, taking into account the economic environment and the financial results achieved and planned. Comet may balance its capital structure in several ways, including through the payment of dividends, capital repayment, new share issues, share buybacks and the issuance or redemption of debt.

Comet monitors and evaluates its capital structure by reference to net debt and the equity ratio, with the aim of ensuring that the capital structure covers the business risks and assures the Group's lasting financial flexibility.

In thousands of CHF	2022	2021
Current debt and lease liabilities	3,955	3,949
+ Non-current debt and lease liabilities	93,911	75,462
./. Cash and cash equivalents	125,945	115,533
Net debt	(28,079)	(36,122)
EBITDA	118,913	102,749
Debt factor	(0.2)	(0.4)
Shareholders' equity	331,532	274,981
Equity ratio (equity in % of total assets)	59.5%	57.0%

28.2 Risks in connection with financial instruments

Comet is exposed to a variety of financial risks. These can be divided into market risks, credit risks and liquidity risks.

28.2.1 Market risk

Market risk comprises risks resulting from volatility in foreign currency exchange rates, interest rates and the price of exchange-traded commodities. As a manufacturer, Comet is inherently exposed to commodity price risks (for example, for inputs such as energy, copper and ceramics), but these are not considered financial risks for the purposes of IFRS 7, as Comet procures commodities only for use in manufacturing, not for trading of commodity contracts. Consequently, these risks are not explicitly determined and are not separately disclosed in the consolidated financial statements.

Foreign exchange risk

With its worldwide activities and strong focus on exports, Comet is exposed to foreign exchange risk arising from currency exposures, as revenues and costs often do not arise in the same currency. The currency risk from operations is reduced by purchasing and selling in local currency where possible, an approach known as natural hedging. In addition, to protect against fluctuation in exchange rates, foreign currency orders in the X-Ray Systems division are partly hedged on receipt of the order, using forward exchange contracts. The Industrial X-Ray Modules and Plasma Control Technologies divisions partly hedge the

expected cash flows in foreign currency up to a one-year time horizon, by means of forward exchange contracts.

As Comet hedges only cash flows, there are no hedges of net investments in foreign operations and no hedges related to translation of its foreign subsidiaries' income, assets and liabilities into Swiss francs for inclusion in its consolidated financial statements.

The table below shows the sensitivity of income before tax and of shareholders' equity to a hypothetical 10% movement in those exchange rates that are material for Comet, with all other variables held constant. The most important monetary foreign currency positions in the balance sheets of the Group companies are in euros and US dollars. The sensitivity analysis covers only monetary balance sheet items that, relative to the functional currency of the respective Group company, are settled in foreign currencies. A reduction in exchange rates by the same percentage would produce an opposite effect of equal size.

Fiscal year 2022

	Increase in exchange rate in %	Effect on income before tax in thousands of CHF	Effect on equity in thousands of CHF
EUR / CHF	+10	+1,276	+1,485
USD / CHF	+10	+8,454	+388

Fiscal year 2021

	Increase in exchange rate in %	Effect on income before tax in thousands of CHF	Effect on equity in thousands of CHF
EUR / CHF	+10	+2,131	+310
USD / CHF	+10	+7,788	+0

Interest rate risk

Comet's only market debt instrument is a CHF 60 million bond with a fixed coupon measured at amortized cost. Consequently, volatility in market interest rates did not have an effect on the carrying amounts of the debt, nor therefore on income before tax or on equity. However, Comet's debt financing exposes it to interest rate risk during refinancing in fiscal year 2026.

Comet's cash and cash equivalents and time deposits are subject to market risk associated with interest rate fluctuations. The market value of fixed rate securities may be adversely affected by a rise in interest rates.

The total interest income recognized in fiscal year 2022 amounted to CHF 0.4 million (prior year: CHF 0.2 million), mainly related to variable rate cash investments and deposits. The Group estimates that, given a possible increase or decrease of 25 basis points in Swiss franc, euro and US dollar market interest rates, with all other variables (including foreign exchange rates) held constant, interest income would have been CHF 20 thousand higher or CHF 20 thousand lower, respectively (prior year: nil).

The above sensitivity analyses are for illustration purposes only, as in practice, market rates rarely change in isolation from other factors that also affect Comet's financial position and results.

28.2.2 Credit risk

Credit risk is the risk that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a loss.

Banking transactions

The Group has policies that limit the amount of counterparty credit exposure to any single financial institution and actively monitors these exposures. The financial transactions are predominantly entered into with investment grade financial institutions, and in principle, Comet requires a minimum long-term rating of A- for its deposit and cash investments. The Group may deviate from this requirement from time to time for operational reasons. The highest exposure to a single financial counterparty on December 31, 2022, amounted to CHF 42.4 million (prior year: CHF 62.7 million).

Trade receivables

Comet operates worldwide, selling its products in various countries and to a large number of customers. Payment terms vary according to the market and customer. The credit limits for and payments received from each customer are monitored by the individual Group companies; the resulting information is made available to Group management in the form of monthly special reports. Appropriate allowance for expected risk of default is made through the recognition of impairment on doubtful accounts. Receivables and contract assets are written off only when payment is highly unlikely to be forthcoming. Detailed information on impairment of receivables and contract assets and its movement in the year can be found in note 12.

The amount of exposure to credit risk equals the carrying amount of the respective financial instruments in the balance sheet.

28.2.3 Liquidity risk

Comet defines liquidity risk as the risk that, at any time, the Group will not be able to meet its financial obligations as they come due. The Group views available cash balances and funds from operating activities as its primary sources of liquidity, complemented with access to external sources of funds when deemed to be required. As of December 31, 2022, the Group's liquidity position primarily consisted of CHF 125.9 million of cash and cash equivalents. Based on the current operating performance and liquidity position, the Group believes that its liquidity position will be sufficient for working capital, capital expenditures, interest payments, dividends and scheduled debt repayments for the next twelve months.

As a key principle of its financial management, Comet monitors and maintains sufficient liquid assets and access to credit lines to assure access to liquidity at all times. Liquidity planning and funding are managed centrally for the whole Group. Comet manages short-term liquidity based on projected cash flows. A rolling three-month cash flow forecast is prepared monthly, based on a decentralized bottom-up approach. The long-term financing of subsidiaries is normally arranged through intercompany loans issued by Comet Holding AG. Furthermore, the Group's credit quality is safeguarded by monitoring the debt-equity ratio.

Following is an overview of all contractual payment obligations as at the balance sheet date, on an undiscounted basis. Amounts in foreign currency have been translated using the reporting date closing rate.

Fiscal year 2022

In thousands of CHF

	Note	Carrying amount	Payments due by period			
			Total	2023	2024 – 2026	After 2026
Debt	20	59,669	62,578	780	61,798	—
Lease liabilities	17	38,197	44,736	4,205	17,452	23,079
Financial liabilities	21	39,902	39,902	39,902	—	—
Other financial liabilities	13	11	11	11	—	—
Total		137,779	147,227	44,898	79,250	23,079

Fiscal year 2021

In thousands of CHF

	Note	Carrying amount	Payments due by period			
			Total	2022	2023 – 2026	After 2026
Debt	20	59,571	63,358	780	62,578	—
Lease liabilities	17	19,840	21,766	4,278	8,933	8,554
Financial liabilities	21	35,116	35,116	35,116	—	—
Other financial liabilities	13	894	894	894	—	—
Total		115,421	121,134	41,068	71,512	8,554

The item “debt” represents the principal amounts of current and non-current debt, including underlying contractual interest payments.

The contract amounts of open derivative positions are presented in note 13.

29 Share-based payments**Main elements of the compensation system**

The remuneration of the members of the Executive Committee consists of fixed compensation and a performance-based component. The total compensation takes into account the recipient's position and level of responsibility.

The profit-sharing remuneration of the members of the Executive Committee consists of annually paid compensation under a short-term incentive plan (STIP) and a long-term incentive plan (LTIP). Two-thirds of the compensation under the STIP is paid in cash and one-third of it is paid in stock. The compensation under the LTIP is paid only in stock. The total variable compensation (STIP and LTIP combined) is capped by an upper limit. The profit-sharing compensation of employees who are not members of the Executive Committee is paid only in cash.

Share-based compensation of the members of the Board of Directors

To ensure the independence of the Board of Directors in its supervision of the Executive Committee, the Board members receive only a fixed retainer, of which 60% is paid in cash (however, until the 2022 Annual Shareholder Meeting, the portion paid in cash was two-thirds) and 40% is paid in stock (however, until the 2022 Annual Shareholder Meeting, the portion paid in stock was one-third). The stock awarded is subject to a holding period of three years during which it cannot be sold.

Share-based compensation of the members of the Executive Committee

In addition to the fixed compensation, the members of the Executive Committee can earn a performance-related, STIP pay component, of which one-third is paid in stock. The remaining balance of the STIP amount is paid in cash. Additionally, further stock compensation can be granted, under the LTIP. The stock transferred under the STIP is subject to a holding period of three years from the date of the award. Stock transferred under the LTIP does not have a holding period.

Calculation of grant price for share awards

The grant price, at which the stock is awarded and transferred to recipients, is the average closing market price of the stock in the period between (and excluding) the date of the annual results press conference and the date of the Annual Shareholder Meeting.

Expenses recorded

The expense recognized for share-based payments to the Executive Committee and Board of Directors in the year under review was CHF 1.3 million (prior year: CHF 1.3 million). The amount included CHF 0.4 million granted to the Board of Directors.

30 Compensation of the Board of Directors and Executive Committee

The expense for compensation of the members of the Executive Committee and Board of Directors can be analyzed as follows:

in thousands of CHF	2022	2021
Cash compensation, including short-term employee benefits	5,436	4,631
Contributions to post-employment benefit arrangements	384	311
Expense for share-based payments	1,324	1,258
Total compensation	7,144	6,200

31 Related party transactions

All related party transactions are listed in the table below:

In thousands of CHF	Sales to related parties		Purchases from related parties		Amounts owed by related parties		Amounts owed to related parties	
	2022	2021	2022	2021	2022	2021	2022	2021
Entity with significant influence over the Group								
Variosystems Holding AG, Steinach	7	1	1,844	970	—	—	—	—
Band Cooperative, Bern	9	—	1,565	—	—	—	—	—
Fraunhofer Alumni eV, Germany	162	—	2	—	—	—	—	—
Others	15	—	47	49	—	—	—	—
Total	193	1	3,458	1,019	—	—	—	—
Key management personnel of the Group								
Other directors' interests	—	2	62	7	—	—	—	—
Total	—	2	62	7	—	—	—	—

32	Events after the balance sheet date	There have been no events after the balance sheet date with a material effect on the amounts in the consolidated financial statements.
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33	Proposed distribution to shareholders	The Board of Directors will propose at the 2023 Annual Shareholder Meeting to pay a dividend of CHF 3.70 per share in relation to fiscal year 2022, from retained earnings. In relation to the prior year, Comet paid a dividend of CHF 3.50 per share from retained earnings. The total amount of the proposed dividend in relation to fiscal year 2022 is CHF 28.8 million (prior year: CHF 27.2 million).
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34	Release of the consolidated financial statements for publication	On February 28, 2023, the Board of Directors released these financial statements for publication. The Board will present the financial statements to the Annual Shareholder Meeting on April 14, 2023 for approval.
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To the General Meeting of
Comet Holding Ltd., Flamatt

Berne, 28 February 2023

Report of the statutory auditor

Report on the audit of the consolidated financial statements



Opinion

We have audited the consolidated financial statements of Comet Holding Ltd. and its subsidiaries (the Group), which comprise the consolidated balance sheet as at 31 December 2022, the consolidated statement of income, the consolidated statement of comprehensive income, the consolidated statement of cash flows and the consolidated statement of changes in equity for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the consolidated financial statements (pages 66 to 113) give a true and fair view of the consolidated financial position of the Group as at 31 December 2022 and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS) and comply with Swiss law.



Basis for opinion

We conducted our audit in accordance with Swiss law, International Standards on Auditing (ISA) and Swiss Standards on Auditing (SA-CH). Our responsibilities under those provisions and standards are further described in the "Auditor's responsibilities for the audit of the consolidated financial statements" section of our report. We are independent of the Group in accordance with the provisions of Swiss law, together with the requirements of the Swiss audit profession, as well as those of the International Ethics Standards Board for Accountants' *International Code of Ethics for Professional Accountants (including International Independence Standards)* (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.



Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.



We have fulfilled the responsibilities described in the “Auditor's responsibilities for the audit of the consolidated financial statements” section of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the consolidated financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the consolidated financial statements.

Valuation of goodwill and other intangible assets with indefinite useful lives

Risk	<p>Management reviews the carrying amount of its cash generating units annually or more frequently if any impairment indicators are present with respect to goodwill and other intangible assets with indefinite useful lives. The impairment assessment involves performing a comparison of the estimated recoverable amount (fair value or higher net present value of each cash-generating unit) with its carrying amount.</p> <p>These annual impairment tests were significant to our audit because the balances for goodwill and other intangible assets with indefinite useful lives of CHF 30.4 million as of 31 December 2022 are material to the financial statements. Furthermore, the underlying estimations to the impairment assessment are complex and any impairment of goodwill and other intangible assets with indefinite useful lives can have a material impact on consolidated net income. The valuation also depends on assumptions regarding the future development of the business and on judgments made by management.</p> <p>The impairment tests are complex and described in Note 19. The recoverable amount calculated using the discounted cash flow analysis is based on various assumptions such as future cash flows, terminal value growth rates, inflation rate and discount rate (WACC) of each cash-generating unit. These assumptions are determined by management and are therefore considered to be material judgments.</p>
Our audit response	<p>We assessed the assumptions made in the impairment tests and discussed them with management. We involved our own valuation specialists. We compared the terminal value growth rate as well as the inflation rate with externally available data and checked the clerical accuracy of the model. In addition, we evaluated the estimates made by management in previous years in terms of the actual income generated, as well as assessed management's process for identifying possible impairments. Moreover, we evaluated the disclosures regarding impairment testing on goodwill and other intangible assets with indefinite useful lives with regard to the assumptions made.</p> <p>Our audit procedures did not lead to any reservations concerning the valuation of goodwill and other intangible assets with indefinite useful lives.</p>



3



Other information

The Board of Directors is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated financial statements, the stand-alone financial statements, the compensation report and our auditor's reports thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.



Board of Directors' responsibilities for the consolidated financial statements

The Board of Directors is responsible for the preparation of the consolidated financial statements, which give a true and fair view in accordance with IFRS and the provisions of Swiss law, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern, and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.



Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law, ISA and SA-CH will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

A further description of our responsibilities for the audit of the consolidated financial statements is located on EXPERTsuisse's website at: <https://www.expertsuisse.ch/en/audit-report>. This description forms an integral part of our report.



4

Report on other legal and regulatory requirements



In accordance with Art. 728a para. 1 item 3 CO and PS-CH 890, we confirm that an internal control system exists, which has been designed for the preparation of the consolidated financial statements according to the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

Ernst & Young Ltd

MARTIN MATTES
Licensed audit expert
(Auditor in charge)

CRISTINA ZIMMERMANN
Licensed audit expert

Financial metrics

Alternative performance measures

Comet uses key indicators defined in the International Financial Reporting Standards (IFRS) in its entire financial reporting, as well as selected alternative performance measures (APMs). These APMs provide useful information on the Group's financial situation and are used for financial management and controllership purposes. As these measures are not defined under IFRS, their definition and calculation may differ from those used by other companies. It should be noted that comparability across companies may therefore be limited.

The key alternative performance measures used in the reporting on fiscal year 2022 are defined as follows:

Key performance measures	Comet definitions
Gross profit, gross profit margin	Gross profit is calculated as net sales less cost of sales. Gross profit margin represents gross profit as a percentage of net sales.
Earnings before interest, taxes, depreciation and amortization (EBITDA) EBITDA margin	Operating income as per consolidated statement of income before depreciation on property, plant and equipment & right-of-use assets, amortization of intangible assets and impairment losses. EBITDA as a percentage of net sales.
Net debt Debt factor	Interest-bearing debt (such as current and non-current debt and lease liabilities) less cash and cash equivalents. Net debt divided by EBITDA.
Equity ratio	Total equity attributable to the shareholders of Comet Holding AG divided by total assets.
Free cash flow (FCF)	Sum of net cash flows from operating and investing activities.
Return on capital employed (ROCE)	ROCE is the ratio of operating income less income tax (NOPAT) to total capital employed. Capital employed is defined as net working capital (aggregated amount of net trade receivables, inventories, trade payables, sales commissions and contract liabilities) plus non-current assets employed (aggregated amount of property, plant and equipment, right-of-use assets and intangible assets).

Calculation of net debt and of debt factor

In thousands of CHF	December 31, 2022	December 31, 2021
Current debt and lease liabilities	3,955	3,949
+ Non-current debt and lease liabilities	93,911	75,462
./. Cash and cash equivalents	125,945	115,533
Net debt	(28,079)	(36,122)
EBITDA	118,913	102,749
Debt factor	(0.2)	(0.4)

Calculation of free cash flow

In thousands of CHF	December 31, 2022	December 31, 2021
Net cash provided by operating activities	64,407	70,489
Net cash (used in) investing activities	(22,234)	(12,722)
Free cash flow	42,173	57,767

Calculation of return on capital employed

In thousands of CHF	December 31, 2022	December 31, 2021
Trade receivables, net	78,297	65,057
Inventories	122,468	99,268
Trade payables	(31,191)	(26,095)
Sales commissions	(2,809)	(3,593)
Contract liabilities ¹	(16,609)	(27,086)
Net working capital (NWC)	150,156	107,551
Property, plant and equipment	119,968	111,703
Right-of-use assets	32,401	18,791
Intangible assets	38,904	41,027
Non-current assets employed	191,273	171,521
Total capital employed	341,429	279,072
Average capital employed²	310,251	262,808
Operating income	98,975	84,085
./. Income tax	(17,259)	(14,771)
Net operating profit after tax (NOPAT)	81,716	69,314
NOPAT	81,716	69,314
Capital employed	310,251	262,808
Return on capital employed (ROCE)¹	26.3%	26.4%

¹ In the year under review and in the prior year, the IXS division's prepayments from customers in "contract liabilities" were netted with already invoiced contract assets in "trade and other receivables".

² Return on capital employed (ROCE) is calculated using the average capital employed, based on the beginning and ending balance of capital employed in the period.

Separate Financial Statements of Comet Holding AG

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Statement of income

In thousands of CHF	2022	%	2021	%
Dividend income	33,425		17,374	
Other financing income	1,740		1,781	
Total income	35,165	100.0%	19,155	100.0%
Financing expenses	(2,162)		(1,081)	
Other operating expenses	(2,856)		(2,343)	
Total expenses	(5,019)	- 14.3%	(3,423)	- 17.9%
Net income for the year	30,147	85.7%	15,732	82.1%

Balance sheet

In thousands of CHF	Note	Dec. 31, 2022	%	Dec. 31, 2021	%
Assets					
Cash and cash equivalents		4,150		846	
Other current receivables from subsidiaries		325		196	
Prepaid expenses		363		490	
Total current assets		4,837	2.3%	1,532	0.7%
Non-current financial assets – loans	3	118,162		117,240	
Investments in subsidiaries	2	86,632		86,632	
Total non-current assets		204,794	97.7%	203,873	99.3%
Total assets		209,632	100.0%	205,405	100.0%
Liabilities and shareholders' equity					
Other current liabilities to non-Group entities		80		113	
Other current liabilities to shareholders and governing bodies		237		132	
Accrued expenses		1,190		1,088	
Non-current interest-bearing liabilities	8	60,000		60,000	
Total liabilities		61,508	29.3%	61,333	29.9%
Capital stock	5	7,774		7,770	
Statutory capital reserve		3,005		1,918	
Statutory earnings reserve		4,967		4,967	
Retained earnings brought forward		102,232		113,685	
Net income for the year		30,147		15,732	
Total retained earnings		132,379		129,417	
Total shareholders' equity		148,124	70.7%	144,072	70.1%
Total liabilities and shareholders' equity		209,632	100.0%	205,405	100.0%

Statement of changes in equity

In thousands of CHF	Capital stock	Capital reserve	General legal reserve	Retained earnings	Total shareholders' equity
December 31, 2019	7,764	1,093	4,967	118,999	132,823
Net income	–	–	–	12,522	12,522
Dividend payment to shareholders of Comet Holding AG	–	–	–	(7,764)	(7,764)
Increase in capital stock	4	447	–	–	450
December 31, 2020	7,768	1,540	4,967	123,757	138,031
Net income	–	–	–	15,732	15,732
Dividend payment to shareholders of Comet Holding AG	–	–	–	(10,098)	(10,098)
Increase in capital stock	2	405	–	–	407
Alignment of capital reserve ¹	–	(27)	–	27	–
December 31, 2021	7,770	1,918	4,967	129,417	144,072
Net income	–	–	–	30,147	30,147
Dividend payment to shareholders of Comet Holding AG	–	–	–	(27,193)	(27,193)
Increase in capital stock	4	1,095	–	–	1,099
Alignment of capital reserve ¹	–	(8)	–	8	–
December 31, 2022	7,774	3,005	4,967	132,379	148,124

¹ In the fiscal year under review and in the prior year, the amount of the capital reserve reported in these financial statements was aligned to the amount of the capital reserve reported to the tax authorities.

Notes to the separate financial statements of Comet Holding AG

General information

Comet Holding AG has its registered office in Flamatt, Switzerland and is the Comet Group's parent holding company listed on the Swiss stock exchange. The separate financial statements of Comet Holding AG at and for the year ended December 31, 2022 comply with the provisions of the Swiss Code of Obligations. The manner of the inclusion of Comet Holding AG in the consolidated accounts is governed by the measurement principles set out in the notes to the consolidated financial statements.

01 Accounting principles

These separate financial statements were prepared in accordance with the principles of the applicable Swiss Accounting Law (title 32 of the Swiss Code of Obligations).

Receivables and loans

Receivables and loans are stated at nominal amounts less any necessary write-downs.

Investments in subsidiaries

Investments in subsidiaries are recognized at historical cost less necessary impairment charges, and are individually tested annually for impairment.

02 Investments in subsidiaries

Comet Holding AG directly held the following companies at December 31, 2022:

Company	Registered office	Currency	Capital stock	Equity interest in % ¹	
				2022	2021
Comet AG	Flamatt, Switzerland	CHF	2,000,000	100%	100%
Comet Electronics (Shanghai) Co. Ltd.	Shanghai, China	CNY	5,466,148	100%	100%
Comet Mechanical Equipment (Shanghai) Co. Ltd.	Shanghai, China	CNY	1,655,420	100%	100%
Comet Technologies USA, Inc.	Shelton, CT, USA	USD	1,000	100%	100%
Comet Technologies Korea Co. Ltd.	Suwon, Korea	KRW	500,000,000	100%	100%
Comet Yxlon GmbH ²	Hamburg, Germany	EUR	110,000	100%	100%
Comet Technologies Denmark A/S	Taastrup, Denmark	DKK	601,000	100%	100%
Comet Technologies Japan KK	Yokohama, Japan	JPY	10,000,000	100%	100%
Yxlon (Beijing) X-Ray Equipment Trading Co. Ltd.	Beijing, China	CNY	1,077,000	100%	100%
Comet Technologies Malaysia Sdn. Bhd.	Penang, Malaysia	MYR	3,000,000	100%	100%
Object Research Systems (ORS) Inc.	Montreal, Canada	CAD	15,001,000	100%	100%
Comet Solutions Taiwan Ltd.	Hsinchu County, Taiwan	TWD	5,000,000	100%	100%

¹ Comet Holding AG also holds 100% of the voting rights in all companies.

² The company was renamed "Comet Yxlon GmbH" from "Yxlon International GmbH".

**03 Non-current financial assets
– loans**

Loans to subsidiaries were as follows:

In thousands of CHF	2022	2021
Comet AG	81,903	95,133
Comet Technologies USA, Inc.	—	1,566
Comet Yxlon GmbH	20,688	10,943
Comet Technologies Denmark A/S	3,014	2,225
Comet Technologies Japan KK	1,753	—
Comet Technologies Malaysia Sdn. Bhd.	9,140	7,193
Object Research Systems (ORS) Inc.	1,664	—
Comet Solutions Taiwan Ltd.	—	180
Total loans to subsidiaries	118,162	117,240

04 Listing and shareholders

Comet Holding AG (the "Company") is the Group's only company listed on a stock exchange. The Company's registered office is in Flamatt, Switzerland. The registered shares of Comet Holding AG have been listed in the main market segment of the SIX Swiss Exchange in Zurich since December 17, 2002.

Ticker symbol	COTN
Swiss security number	36082699
ISIN	CH0360826991
Closing price at December 31, 2022	CHF 195.80
Market capitalization at December 31, 2022	CHF 1,522 million

Assorted financial metrics on the stock of Comet Holding AG are provided in the section "Information for investors" in this annual report.

Listed and non-listed Group companies

Comet Holding AG has no publicly traded subsidiaries. The companies consolidated in the Group are presented in note 2, "Investments in subsidiaries".

Registered shareholders

At December 31, 2022, Comet Holding AG had 7,053 voting shareholders of record (i.e., voting shareholders registered in the share register; prior year: 6,206). Of the total issued registered stock, 100% (prior year: 100%) represented free float. Comet Holding AG held no treasury stock at December 31, 2022 (prior year: nil). The structure of share ownership size classes among the shareholders of record at December 31, 2022 was as follows:

Number of shares	Number of shareholders
1 to 1,000	6,634
1,001 to 10,000	359
10,001 to 50,000	46
50,001 to 100,000	9
More than 100,000	5

This analysis includes only the stock of shareholders who were registered in the share register. At December 31, 2022 the shares of unregistered owners amounted to 40% of the total (prior year: 46%).

Significant shareholders

Ownership interests in companies domiciled in Switzerland whose shares are listed at least partly in Switzerland must be notified both to the issuer company and to the SIX Swiss Exchange when the holder's voting rights reach, increase above or fall below certain thresholds. These notification thresholds are 3%, 5%, 10%, 15%, 20%, 25%, 33 ⅓%, 50% and 66 ⅔% of voting rights. The relevant details are set out in the Financial Market Infrastructure Act (FinMIA) and in the Ordinance of the Swiss Financial Market Supervisory Authority on Stock Exchanges and Securities Trading (the FINMA Stock Exchange Ordinance).

At December 31, 2022 the Company, according to disclosure notifications, had the following significant shareholders (defined for this purpose as shareholders with voting rights of 3% or more of the Comet capital stock recorded in the Swiss commercial register of companies):

Beneficial owner	Direct shareholder	Share of voting rights as disclosed by shareholders
Pictet Asset Management SA (Direction de Fonds)		5.27%
UBS Fund Management (Switzerland AG)		5.23%
Credit Suisse Funds AG		3.22%
Ruth Wertheimer	7-Industries Holding B.V.	3.13%

The Company has not been notified of any other shareholders that held 3% or more of its shares. To the best of the Company's knowledge, there were no voting pool agreements.

Reportable changes during fiscal year 2022

In the fiscal year, 43 reportable announcements were published. For a complete list of all announcements under section 125 FinMIA, refer to the publication platform of the disclosure section of the SIX Swiss Exchange: www.six-exchange-regulation.com/en/home/publications/significant-shareholders.html

Cross-shareholdings

There were no cross-shareholdings with other publicly traded companies.

05 Equity capital structure

Capital stock

The capital stock at January 1, 2022 was CHF 7,769,534, divided into 7,769,534 registered shares with a par value (nominal value) of CHF 1.00 per share.

In fiscal year 2022 the capital stock was increased by 4,432 shares from the portion of authorized capital designated for equity-based compensation. Including the increase of 4,432 shares from this portion of authorized capital, Comet Holding AG at December 31, 2022 thus had a new total of CHF 7,773,966 of capital stock, divided into 7,773,966 registered shares with a par value of CHF 1.00 per share. The capital stock is fully paid in.

At its meeting on June 10, 2022 the Board of Directors established that the capital increase from authorized capital for equity-based compensation was properly performed. The information in the commercial register, and the Articles of Association of Comet Holding AG, were updated to reflect the change in capital stock.

	2022		2021	
	Number of shares	Par value in CHF	Number of shares	Par value in CHF
January 1	7,769,534	7,769,534	7,767,887	7,767,887
Increase in capital from the portion of authorized capital designated for equity compensation	4,432	4,432	1,647	1,647
December 31	7,773,966	7,773,966	7,769,534	7,769,534

At the balance sheet date, Comet Holding AG held no treasury stock (prior year: nil).

Authorized capital for equity compensation

Under article 3b of its Articles of Association, a portion of the Company's unissued authorized capital is designated for use only as equity-based compensation (in German this portion is known as "bedingtes Aktienkapital"). In such a capital increase, stock is issued to Executive Committee members and/or Board members of Comet Holding AG. With respect to this portion of authorized capital, the other shareholders' pre-emptive rights are excluded. The issuance of stock or stock subscription rights is based on a compensation plan (in the form of a written regulation) adopted by the Board of Directors.

In May 2022, in accordance with the compensation plan, the members of the Board of Directors were granted a total of 500 shares of stock in payment of CHF 131,930 of fixed retainers due for fiscal year 2021. In addition, as part of their compensation for 2022, the members of the Board of Directors were granted a total of 250 shares in payment of CHF 65,965 of fixed retainers due for the period from January 1, 2022 to the 2022 Annual Shareholder Meeting. The fully paid shares were applied to the retainers due at a price of CHF 263.86 per share.

Members of the Executive Committee were granted a total of 3,682 shares in payment of CHF 973,557 of profit-sharing compensation due for fiscal year 2021. The fully paid shares were applied to the compensation due at a price of CHF 263.86 per share.

As a result of these grants of a total of 4,432 shares made in 2022, the Company's unissued authorized capital for equity-based compensation showed the following movement:

	2022		2021	
	Number of shares	Par value in CHF	Number of shares	Par value in CHF
January 1	193,586	193,586	195,233	195,233
Increase in capital (awards to Board of Directors for prior term's retainer and to Executive Committee for prior year's profit-sharing compensation)	(4,432)	(4,432)	(1,647)	(1,647)
December 31	189,154	189,154	193,586	193,586

At the end of the year, the remaining unissued authorized capital for equity-based compensation was CHF 189,154, or 2.4% of the existing capital stock.

06 Disclosure of shareholdings of the Board of Directors and Executive Committee

The ownership interests in Comet Holding AG held by members of the Board of Directors and Executive Committee are disclosed below. This disclosure includes all persons who held positions on the Board of Directors or Executive Committee for all or part of the year under review, regardless of whether they still did so at the balance sheet date. The shareholdings shown include those of respective related parties.

	Total number of shares		Of which: number of shares subject to holding periods ending on			Freely disposable	Share of voting rights	
	2022	2021	4/24/2023	4/23/2024	4/15/2025		2021	2021
Heinz Kundert Chair of the Board	4,755	4,505	656	285	250	3,564	0.1%	0.1%
Mariel Hoch Vice Chair of the Board (since April 22, 2021)	1,469	1,344	328	142	125	874	0.0%	0.0%
Gian-Luca Bona Member of the Board	6,119	5,994	328	142	125	5,524	0.1%	0.1%
Patrick Jany Member of the Board	2,980	2,855	328	142	125	2,385	0.0%	0.0%
Tosja Zywiets Member of the Board (since April 22, 2021)	125	–	–	–	125	–	0.0%	0.0%
Edeltraud Leibrock Member of the Board (since April 14, 2022)	–	–	–	–	–	–	0.0%	0.0%
Kevin Crofton Chief Executive Officer (until August 31, 2022)	10,841	9,168	–	165	1,506	9,170	0.1%	0.1%
Stephan Haferl Chief Executive Officer (since September 1, 2022) President of X-Ray Modules division (until August 31, 2022)	921	488	99	118	359	345	0.0%	0.0%
Lisa Pataki Chief Financial Officer	519	36	–	36	436	47	0.0%	0.0%
Michael Kammerer President of Plasma Control Technologies division	677	377	116	139	422	–	0.0%	0.0%
Keighley Peters Chief Information Officer	408	1	–	1	370	37	0.0%	0.0%
Michael Berger President of X-Ray Modules division (since September 1, 2022)	–	–	–	–	–	–	0.0%	0.0%
Dionys Van de Ven President of X-Ray Systems division (since July 1, 2022)	–	–	–	–	–	–	0.0%	0.0%

Each 10,000 registered shares of Comet Holding AG, of a par value of CHF 1.00 per share, represented 0.1286% of all voting power (prior year: 0.1287%). The members of the Board of Directors and Executive Committee held an aggregate total of 0.4% of voting rights (prior year: 0.3%). No material changes in ownership interests arose after the balance sheet date of December 31, 2022.

07	Options and conversion rights	Comet Holding AG has not issued any conversion rights or stock options.
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08	Bond	The bond maturing on April 20, 2021 was repaid and replaced with a new bond issued by Comet Holding AG on April 20, 2021 in the amount of CHF 60 million. The bond was issued at par. The term of the bond is five years and it matures on April 20, 2026. The fixed coupon rate over the term is 1.30%, payable annually on April 20. The bond is listed on the SIX Swiss Exchange (Swiss security number 110 109 656, ticker symbol COT21).
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09	Guarantees and pledged assets	The Group is taxed as a single entity for purposes of value-added taxation, and Comet Holding AG therefore has joint and several liability for the value-added tax obligations of its Swiss subsidiary.
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10	Number of full-time equivalents	The number of employees of Comet Holding AG in 2022 and 2021 in terms of the annual average number of full-time equivalents was less than ten.
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11	Events after the balance sheet date	There have been no events after the balance sheet date with a material effect on the amounts in the financial statements.
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12	Release of the separate financial statements for publication	The Board of Directors released these annual financial statements on February 28, 2023 for publication and will present them to shareholders for approval at the Annual Shareholder Meeting on April 14, 2023.
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Board of Directors' proposal for the appropriation of retained earnings

01 Retained earnings in 2022

In thousands of CHF	2022
Earnings brought forward	102,232
Net income for the year	30,147
Retained earnings available for distribution	132,379

02 Proposal for the appropriation of retained earnings

At the Annual Shareholder Meeting the Board of Directors will propose to pay a dividend of CHF 3.70 per share from retained earnings.

Provided this dividend is approved, it will result in the following movement in retained earnings:

In thousands of CHF	2022
Retained earnings at December 31, 2022	132,379
Dividend payment of CHF 3.70 per share	(28,764)
Retained earnings carried forward	103,615

Provided the proposal is approved, the dividend of CHF 3.70 per entitled share, less 35% withholding tax, will be paid on April 20, 2023.



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To the General Meeting of
Comet Holding Ltd., Flamatt

Berne, 28 February 2023

Report of the statutory auditor

Report on the audit of the financial statements



Opinion

We have audited the financial statements of Comet Holding Ltd. (the Company), which comprise the balance sheet as at 31 December 2022 and the statement of income and statement of changes in equity for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the financial statements (pages 121 to 130) comply with Swiss law and the Company's articles of incorporation.



Basis for opinion

We conducted our audit in accordance with Swiss law and Swiss Standards on Auditing (SA-CH). Our responsibilities under those provisions and standards are further described in the "Auditor's responsibilities for the audit of the financial statements" section of our report. We are independent of the Company in accordance with the provisions of Swiss law and the requirements of the Swiss audit profession, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.



Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

We have fulfilled the responsibilities described in the "Auditor's responsibilities for the audit of the financial statements" section of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the financial statements.



2

Valuation of investments and loans

Risk	The company holds as parent of the group investments in various subsidiaries. Furthermore, the parent company uses intragroup loans to fund a number of subsidiaries. Investments and loans amount to approx. 41% resp. 56% of total assets and are therefore material. By definition, these amounts recognized on the balance sheet are subject to an impairment risk. When there are indications of a possible impairment, management prepares the required calculations and, if applicable, records an allowance. The calculations are based in part on simplified principles, especially when management considers the risk of an impairment to be low.
Our audit response	We reviewed the calculations performed by management, which were based on statutory financial statements or assessments in connection with the consolidated financial statements. For more complex cases, we involved our valuation specialists in checking particularly the plausibility of the discount rates used. Our audit procedures did not lead to any reservations concerning the valuation of investments and loans.



Other information

The Board of Directors is responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated financial statements, the stand-alone financial statements, the compensation report and our auditor's reports thereon.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.



Board of Directors' responsibilities for the financial statements

The Board of Directors is responsible for the preparation of the financial statements in accordance with the provisions of Swiss law and the Company's articles of incorporation, and for such internal control as the Board of Directors determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern, and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.



3

**Auditor's responsibilities for the audit of the financial statements**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law and SA-CH will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on EXPERTsuisse's website at: <https://www.expertsuisse.ch/en/audit-report>. This description forms an integral part of our report.

Report on other legal and regulatory requirements

In accordance with Art. 728a para. 1 item 3 CO and PS-CH 890, we confirm that an internal control system exists, which has been designed for the preparation of the financial statements according to the instructions of the Board of Directors.

Furthermore, we confirm that the proposed appropriation of available earnings complies with Swiss law and the Company's articles of incorporation. We recommend that the financial statements submitted to you be approved.

Ernst & Young Ltd

MARTIN MATTES
Licensed audit expert
(Auditor in charge)

CRISTINA ZIMMERMANN
Licensed audit expert

Corporate Governance 2022

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Corporate governance in 2022

Corporate governance is defined by Comet as the entirety of the principles and practices aimed at safeguarding shareholder interests. While maintaining management's decision-making capability and efficiency, the aim of good corporate governance is to ensure an appropriate balance of leadership and control, together with transparent reporting.

This corporate governance report describes the management structure and control principles in place at the top organizational levels of the Group. The key elements are defined in Comet's Articles of Association (also known as its Bylaws) and in its Organizational Regulations (specifying the Company's governance structure and governance policies). The corporate governance report is based on the requirements of the SIX Swiss Exchange's Directive on Information Relating to Corporate Governance (DCG). The disclosure requirements of the Ordinance Against Excessive Compensation at Listed Companies (OAEC) are fully met. Comet also takes into account the recommendations of the Swiss Code of Best Practice for Corporate Governance issued by *economiesuisse*.

Information policy

Comet informs its shareholders, the media, financial analysts and other stakeholders with the greatest possible transparency and based on the principle of equal treatment. The Group publishes semi-annual media releases to update investors on its business and financial results. Comet also publishes annual reports and half-year reports, which are prepared in compliance with Swiss stock corporation law and International Financial Reporting Standards (IFRS). As well, information is provided to additional audience segments via the following events:

- To shareholders, in connection with the Shareholder Meeting
- To media representatives and financial analysts, through press conferences
- To institutional investors, through road shows and an annual Capital Markets Day

Important price-sensitive events are communicated in a timely manner via electronic media and in accordance with the directive on ad-hoc publicity (i.e., the ad-hoc disclosure requirements) of SIX Exchange Regulation, a division of the SIX Swiss Exchange.

Key dates

The dates of the most important publications and events are given below:

End of fiscal year	December 31, 2022
Annual results press conference	March 2, 2023
Publication of annual report	March 2, 2023
Annual Shareholder Meeting	April 14, 2023
End of first half of fiscal year	June 30, 2023
Half-year results press conference	July 28, 2023
Publication of half-year report	July 28, 2023

Publication media

Comet's annual report and half-year report, its Articles of Association and its compensation report are published on the Group's website at www.comet-group.com/en/investors/downloads.

For disclosure announcements for stock exchange purposes, Comet Holding AG uses the electronic publication platform operated by the SIX Swiss Exchange: <https://www.six-group.com/en/products-services/the-swiss-stock-exchange/market-data/news-tools/official-notice.html>. The Group's website at www.comet-group.com offers a wealth of information, including details of the Group's business activities and access to the media releases and presentations for press conferences. As well, anyone may register on the website to automatically receive all press releases in electronic form.

Group structure and shareholders

Structure of the operating activities of the Comet Group

Comet Holding AG is a stock corporation with limited liability under Swiss corporate law. It is registered with the commercial register of the Canton of Fribourg, Switzerland under company registration number CHE-101.348.386. The registered office of Comet Holding AG is located at Herrengasse 10, 3175 Flamatt, Switzerland. Business operations are conducted through the group of companies listed in note 2 of the separate financial statements of Comet Holding AG. All companies are wholly owned by Comet Holding AG.

The Group's commercial activities are divided into three divisions: Plasma Control Technologies (PCT), X-Ray Systems (IXS) and Industrial X-Ray Modules (IXM). Financial reporting is segmented along these divisional lines. The financial data for the individual divisions is found in the segment reporting within the notes to the consolidated financial statements (note 4, "Segment reporting").

Listed Group company: Comet Holding AG

Comet Holding AG is the Group's only company listed on a stock exchange. The registered shares have been listed in the main market segment of the SIX Swiss Exchange in Zurich, Switzerland, since December 17, 2002 (ISIN no. CH0360826991). The closing share price on December 31, 2022 was CHF 195.80 (prior year: CHF 336.50), which resulted in a market capitalization of CHF 1,522.1 million (prior year: CHF 2,614.4 million). Further information is provided in note 4, "Listing and shareholders" of the separate financial statements of Comet Holding AG and in the section "Information for investors" in the management report.

At December 31, 2022, Comet Holding AG had 7,053 voting shareholders of record (i.e., voting shareholders registered in the share register; prior year: 6,206). Of the total issued registered stock, 100% (prior year: 100%) represented free float. Comet Holding AG thus held no treasury stock at December 31, 2022 (prior year: nil). Information on the ownership structure and significant shareholders is disclosed in the separate financial statements of Comet Holding AG in note 4, "Listing and shareholders". Disclosure notifications of significant shareholdings in Comet Holding AG that were filed with Comet Holding AG and SIX Swiss Exchange are available from the online publication platform of the SIX Swiss Exchange through the following database search page:

<https://www.ser-ag.com/en/resources/notifications-market-participants/significant-shareholders.html#/>.

At December 31, 2022, Comet Holding AG had no cross-shareholdings with other publicly traded companies (prior year: nil).

Capital structure

Capital stock

As of December 31, 2022, the capital stock of Comet Holding AG amounted to CHF 7,773,966, divided into 7,773,966 fully paid-in, registered shares with a par value (nominal value) of CHF 1.00 per share. With the exception of any treasury stock held by the Company, every share carries dividend rights. Each share represents one vote at the Shareholder Meeting, provided that the shareholder is recorded in the share register.

Under article 3b of the Articles of Association, some of Comet's unissued authorized capital is designated for use as equity-based compensation for members of the Executive Committee and of the Board of Directors of Comet Holding AG only. At December 31, 2022, this portion (referred to in German as "bedingtes Aktienkapital", or conditional capital) consisted of 189,154 shares with a nominal value of CHF 1.00 per share. It corresponded to approximately 2.4% of the existing capital stock. The issuance of stock or stock subscription rights is based on a compensation plan adopted by the Board of Directors. Further information about equity-based compensation can be found in the compensation report.

Further details on the structure of and changes in shareholders' equity of Comet Holding AG are disclosed in the separate financial statements of Comet Holding AG in the statement of changes in equity and within note 4, "Listing and shareholders", note 5, "Equity capital structure" and note 7, "Options and conversion rights". As of December 31, 2022, Comet Holding AG had no participation certificates or dividend-right certificates outstanding (prior year: nil).

Limitations on transferability and nominee registrations

The Company keeps a share register in which the shares' owners and beneficial owners and the number of their shares are recorded. The share register is operated on behalf of Comet by Devigus Engineering AG. For the purposes of the legal relationship with the Company, shareholders or beneficial owners of shares are recognized as such only if they are registered in the share register. Purchasers of registered stock or of beneficial rights with respect to registered stock are upon their request recorded as voting shareholders in the share register by the Board of Directors if the purchasers state explicitly that they have acquired, and will hold, the stock or beneficial interest for their own account. Registration in the share register requires evidence of the acquisition of full legal title to the shares or evidence of the establishment of beneficial ownership. For the purpose of this condition, nominee shareholders (nominees) are deemed to be those persons who do not explicitly state in their registration application that they hold the shares for their own account. The Board of Directors registers nominees as holding voting shares only up to a maximum of 5% of the capital stock recorded in the Swiss commercial register of companies. Where legal entities or groups with joint legal status are connected by

capital, voting rights, management or in some other manner, they are deemed to constitute a single nominee, as are all natural persons, legal entities or groups with joint legal status that by agreement, as a syndicate or in any other way act in a coordinated manner in circumventing the nominee rules. The Company may, after hearing the affected party, void registrations in the share register with retroactive effect from the date of registration if they were based on false information given by the purchaser. The purchaser must be informed of the deletion immediately. The Board of Directors determines the details of the application of these provisions and makes the arrangements necessary to ensure compliance with the rules outlined in the Company's Articles of Association.

In fiscal year 2022, the Board of Directors did not recognize any acquirers of shares holding more than 5% of all registered shares as a shareholder or beneficial holder with voting rights, did not reject any requests for registration, and did not remove any shareholders with voting rights from the share register on the grounds of provision of false information.

Convertible bonds and options

As of December 31, 2022, Comet Holding AG had no conversion rights or stock options outstanding (prior year: nil).

Management transactions and measures to prevent insider-trading offenses

The Listing Rules of the SIX Swiss Exchange require the disclosure of management transactions in stock of the Company and related financial instruments. The Board of Directors has issued a corresponding regulation in order to comply with these requirements. The parties whose transactions of this nature are reportable to the Company are the members of the Board of Directors and of the Executive Committee (the Executive Committee is the most senior level of operational management). In fiscal year 2022, one disclosure was filed. Published disclosures can be found on the website of the SIX Swiss Exchange: www.ser-ag.com/en/resources/notifications-market-participants/management-transactions.html#/.

For Comet, regular closed periods (also referred to as blackout periods) for trading in securities of Comet Holding AG are defined as the periods from December 16 and June 16 up to and including the trading day following the publication of the annual or half-year report, respectively, or the publication of the relevant key figures. These closed periods apply to the members of the Board of Directors and the Executive Committee, as well as members of group functions in finance, investor relations and communication. No exceptions were granted in fiscal year 2022.

Board of Directors

The Board of Directors has ultimate responsibility for supervising the Group's top-level operational management personnel. The Board sets the Group's strategic goals and the guidelines for organizational structure and financial planning.

As prescribed by the Articles of Association, the Board of Directors of Comet Holding AG consists of a minimum of five members. The com-

position of the Board of Directors is designed to ensure effectiveness. Key qualities sought in the recruitment of Board members are independent thinking and willingness to work in a team focusing exclusively on the interests of the Company and its principal stakeholders. The Board of Directors nominates non-executive and independent members within the meaning of the Swiss Code of Best Practice for Corporate Governance to be elected by the Annual Shareholder Meeting as members of the Nomination & Compensation Committee.

Composition of the Board of Directors of Comet Holding AG

On December 31, 2022, the Board of Directors of Comet Holding AG had the following six members:

	Nationality	Position on the Board	Member since	Elected until
Heinz Kundert	Swiss	Chair and non-executive member	2019	2023
Mariel Hoch	Swiss	Vice Chair and non-executive member	2016	2023
Gian-Luca Bona	Swiss	Non-executive member	2012	2023
Patrick Jany	German	Non-executive member	2019	2023
Tosja Zywiets	German	Non-executive member	2021	2023
Edeltraud Leibrock	German	Non-executive member	2022	2023

Secretary of the Board (since 2010) and non-member of the Board: Ines Najorka, Vice President of Global Communications.

Additional information on the members of the Board of Directors

The information below outlines the education, significant professional experience and current position of each Board member. Where a place name is not followed by a country or state, the country is Switzerland.



Heinz Kundert

(b. 1952, Swiss citizen)

Education

Degree in mechanical engineering and industry management from ITA and business management from FAH at the University of St. Gallen (HSG)

Professional experience

1981 to 1991: Regional Director Asia, Balzers AG, Balzers, Liechtenstein; 1991 to 1999: Division Manager, Semiconductor and Data Storage, Balzers AG, Balzers, Liechtenstein; 1999 to 2002: COO of Oerlikon-Bührle; 2002 to 2004: CEO of Unaxis AG, Pfäffikon; 2005 to 2015: VP of SEMI Intl. USA and President of SEMI Europe; 2015 to 2018/2022: CEO/Board member of VAT Group, Sennwald; 2019 to 2020: CEO of the Comet Group



Gian-Luca Bona
(b. 1957, Swiss citizen)

Education

Dipl. Phys. master's degree in physics from Swiss Federal Institute of Technology (ETH), Zurich, and Dr. sc. nat. doctorate in physics from ETH, Zurich

Professional experience

1987 to 2002: IBM Research Laboratory, Rüschlikon; 2002: IBM Watson Research Center, Yorktown Heights, NY, USA; 2003 to 2004: Research Manager, Photonics Networks, IBM Research Laboratory, Rüschlikon; 2004 to 2008: Research Functional Manager, Science and Technology, IBM Almaden Research Center, San José, CA, USA; 2008 to 2009: Director of tape storage solutions, IBM, Tucson, AZ, USA; 2009 to May 2022: CEO of Empa (the Swiss Materials Science & Technology Laboratory) and Professor of photonics, ETH Zurich and EPF Lausanne; from June 2022: Professor emeritus



Mariel Hoch
(b. 1973, Swiss and German citizen)

Education

Admitted to the Zurich bar in 2005; Dr. iur doctorate in law from University of Zurich and Lic. iur degree in law from University of Zurich

Professional experience

Partner at the law firm Bär & Karrer AG, Zurich



Patrick Jany
(b. 1968, German citizen)

Education

Degree in business administration from École Supérieure de Commerce de Paris (ESCP), France

Professional experience

1990 to 2006: Various positions at Sandoz, later Clariant, including CFO for ASEAN region, Head of country organization of Clariant Mexico, and Head of corporate development; 2006 to 2020: CFO and member of the Executive Committee of Clariant AG, Muttenz; since May 2020: EVP and CFO at A.P. Moller-Maersk A/S, Copenhagen, Denmark

**Tosja Zywietz**

(b. 1971, German citizen)

Education

Dr. rer. nat. doctorate in physics from Fritz Haber Institute of the Max Planck Society, Berlin, Germany and Dipl. master's degree in physics from University of Göttingen, Germany

Professional experience

2001 to 2003: Consultant in health care, information technology and financial services practices at Boston Consulting Group GmbH; 2003 to 2004: Project Leader at Boston Consulting Group UK LLP; 2002 to 2009: founder and owner of and Director at Biosigna GmbH, Institut für Biosignalverarbeitung und Analyse, Munich, Germany; 2009 to 2019: Chief Strategy Officer and later CEO at Rosenberger Hochfrequenztechnik GmbH & Co. KG, Fridolfing, Germany; since 2020: Executive Committee Member responsible for production, procurement and quality at Sick AG, Waldkirch, Germany

**Edeltraud Leibrock**

(b. 1965, German citizen)

Education

Dr. rer. nat. doctorate in natural sciences from Hamburg University of Technology, Germany, and degree in physics and biology from the University of Regensburg, Germany

Professional experience

2000 to 2009: Consultant at Boston Consulting Group in Munich, Germany, where she supported strategy, IT, and digitalization projects; 2009 to 2011: Group CIO and Executive Vice President at Bayerische Landesbank in Munich, Germany; 2011 to 2015: COO and Member of the Executive Board at KfW Bankengruppe in Frankfurt am Main, Germany; since 2016: founder and Managing Partner of Connected Innovations GmbH in Hamburg, Germany, a specialist consultancy focused on artificial intelligence and automation; since 2021: Managing Partner of Publicis Sapient, a Munich-based consultancy which focuses on digital business transformation.

Operational management functions

With the exception of Heinz Kundert (who was interim CEO from June 21, 2019 to August 31, 2020), no Board member is or was a member of the operational management of Comet Holding AG or any of its subsidiaries over the last three fiscal years.

Disclosure of potential conflicts of interest

No member of the Board of Directors has any material business relationship with Comet Holding AG or any of its subsidiaries. In the event of a potential or impending conflict of interest, the Board member concerned is required to inform the Chair of the Board of Directors immediately.

Activities and interests outside the Group

Article 27 of the Articles of Association, which are compliant with the OAEK, specifies the allowable number of other, external positions that members of the Board of Directors may hold on top management or supervisory bodies, as follows:

- Members of the Board of Directors may each not hold more than five external positions on top management or supervisory bodies of listed (i.e., exchange-traded) companies and not more than seven such external positions in non-listed companies.
- Members of the Board of Directors may each not hold more than ten such positions in associations, non-profit foundations, family foundations and employee pension funds.
- Positions in companies controlled by Comet Holding AG, or positions controlled by it, are not subject to restriction.

In fiscal year 2021 and 2022, no member of the Board of Directors exceeded any limits for additional positions held. At December 31, 2022, the members of the Board of Directors had the following additional positions on top management or supervisory bodies of significant Swiss and foreign private sector and public sector companies, institutions and foundations:

Heinz Kundert

Board member, Variosystems AG, Steinach; Board Chairman, VT5 Acquisition Company AG, Pfäffikon; owner, Kundert Consulting Establishment, Schaan, Liechtenstein

Gian-Luca Bona

Board member, Bobst Group SA, Mex, Switzerland; Board member, Switzerland Innovation Park Ost AG, St. Gallen; Board member, Technopark Zurich foundation; Chairman, glaTec technology center, Dübendorf; Board member, Innovation Park Zurich foundation; Advisory Council member, German Federal Institute for Materials Research and Testing (BAM), Berlin, Germany; Board member, Integra Holding AG, Sarnen, and Integra Metering AG, Therwil

Mariel Hoch

Board member and member of the audit and risk committee and compensation committee, SIG Combibloc Group AG, Neuhausen am Rheinfall; Board member and member of the audit committee, Komax Holding AG, Dierikon; Board member, MEXAB AG; Board member, The Schörling Foundation, Lucerne; Board member, Law & Economics Foundation, St. Gallen; Board member, Irene M. Staehelin Stiftung (a foundation), Zurich

Tosja Zywiets

Board member, Alupak AG, Belp; Board chairman, Wiferion GmbH, Freiburg, Germany; Chairman, Upwind Sports GmbH, Traunstein, Germany; Chairman, Stiftung Traunstein, Traunstein, Germany; Chairman, SMART Precision Tools & Manufacturing GmbH, Denzlingen, Germany

Edeltraud Leibrock

Advisory Board member, Artificial Intelligence Center Hamburg (ARIC), Hamburg, Germany; Supervisory Board member – Deputy Chair, Bau-fi24 Baufinanzierung AG, Hamburg, Germany; Advisory Board member, Bilthouse GmbH, Hamburg, Germany; Advisory Board member, Loanboox GmbH, Zurich; Advisory Board member, Suntrace GmbH, Hamburg, Germany; member, Fraunhofer Alumni e.V., Germany

Board elections and terms

The Board members are elected by the Annual Shareholder Meeting for a term of one year. They are individually elected when standing for

election or re-election. The Annual Shareholder Meeting also elects one member of the Board of Directors as the Board Chair and elects the members of the Nomination & Compensation Committee.

The term of office ends at the conclusion of the next Annual Shareholder Meeting. Re-election for consecutive terms is permitted. If elections are held during a term to replace or add Board members, the newly elected members serve for the remainder of the current term.

The Articles of Association are in accordance with the legal requirements of the OAEC.

Internal organization

Except for the election of the Board Chair and the members of the Nomination & Compensation Committee by the Annual Shareholder Meeting, the Board of Directors constitutes itself at its first meeting after its election or re-election by the Annual Shareholder Meeting. The Board appoints its Vice Chair, the members of the other Board committees and the Board Secretary. The Secretary need not be a member of the Board.

The Chair of the Board of Directors has the following duties and powers:

- Act as chair of the Shareholder Meetings
- Call meetings of the Board of Directors and set the agenda
- Supervise, comply with and implement the resolutions of the Board of Directors
- Immediately inform all members of the Board of Directors of extraordinary events
- Ensure that urgent business matters are transacted within the required timeframe
- Interact with the senior management of the Comet Group
- Monitor the implementation of measures decided by the Board of Directors
- Take all measures required to safeguard the interests of the Comet Group
- Represent the Board of Directors internally and externally

The Vice Chair of the Board assumes the powers and duties of the Chair in his or her absence. The chairs of the Board committees lead their respective committees and report to the Board of Directors.

The Board meets at the invitation of the meeting's chair as often as business requires, or when requested by a Board member in writing for a stated purpose. The Board has a quorum when the majority of members are present. The Board passes its resolutions and performs its elections by an absolute majority of votes cast. In the event of an equality of votes, the chair of the meeting has the casting vote.

Resolutions on a motion may alternatively be reached in writing if no Board member objects to this method. Minutes must be kept of the deliberations and resolutions and be signed by the meeting's chair and the Board Secretary. The minutes are submitted to the Board for approval at its next meeting.

Functioning of the full Board of Directors

A total of nine regular meetings of the full Board were held in the year, as well as several teleconferences. In addition, several meetings of the Board committees were held. An overview of the meetings of the Board of Directors and the members in attendance is shown below.

Name	February		March	April		June			July		October	December	
	BoD	AC	BoD	BoD	BoD	BoD	BoD	AC	BoD	AC	BoD	BoD	AC
Heinz Kundert	x	x	x	x	x	x	x	x	x	x	x	x	x
Mariel Hoch	x	–	x	x	x	x	x	–	x	–	x	x	–
Patrick Jany	x	x	x	x	x	x	x	x	x	x	x	x	x
Gian-Luca Bona	x	–	x	x	x	x	x	–	x	–	x	x	–
Tosja Zywietz	x	x	x	x	x	x	x	x	x	x	x	x	x
Edeltraud Leibrock	(x)	–	(x)	(x)	x	x	x	–	x	–	x	x	–

BoD: Regular meeting of the Board

AC: Audit Committee

x: Attended

(x): Attended as a guest

– -: Not attended or not a member of the Board or Committee at that time

All meetings were attended by Board members physically, except one Board meeting in April, one in July, and the Audit Committee meeting in July. All members participated virtually. Before joining Comet as a member of the Board of Directors, Edeltraud Leibrock attended the meetings virtually, as a guest. Edeltraud Leibrock could not participate physically in the Board meeting in December and therefore participated virtually.

The Board of Directors is regularly kept informed of the course of business by the CEO and CFO at its meetings, and also on an ad hoc basis as needed. Other members of the Executive Committee, other management staff and specialists of the Group regularly attend Board meetings to report on particular projects in their area of responsibility. In addition, external advisors are consulted as required to deal with specific matters. The Board receives monthly written financial reports on the current business performance.

Board committees

In fiscal year 2022 the Board committees had the following members:

Committee	Members
Nomination & Compensation Committee (NCC)	Mariel Hoch (Committee chair) Gian-Luca Bona
Audit Committee (AC)	Patrick Jany (Committee chair) Tosja Zywietz
Technology Committee (TC)	Gian-Luca Bona (Committee chair) Tosja Zywietz (until April 2022) Edeltraud Leibrock (from April 2022)

The Annual Shareholder Meeting elects the members of the Nomination & Compensation Committee. The members of the other committees are elected by the Board from among the Board members for a term of one year. Every committee normally consists of at least two members of the Board and meets at least twice per year, or as often as business requires.

The committees' principal function is to prepare decision support for the full Board in special subject areas. At the regular meetings or as required, the full Board is kept informed of the activities of the individual committees. Reports to the full Board are made orally or in writing as required. The overall responsibility for the tasks assigned to the committees remains with the full Board, which decides as a body on all proposals.

Nomination & Compensation Committee

The Nomination & Compensation Committee (NCC) is made up of two members of the Board, who are elected to the Committee yearly by the Annual Shareholder Meeting. The term of office is one year. Re-election for consecutive terms is permitted. The NCC prepares all agenda items related to the nomination and compensation of Board members and Executive Committee members. The NCC itself does not make decisions, but prepares proposals for the approval of the full Board of Directors. The Committee has the following responsibilities in particular (additional responsibilities may be assigned to it as required):

- Address both the compensation policy for the remuneration of the Board of Directors and Executive Committee, and the Comet Group's compensation structure
- Prepare the compensation report and support the Board of Directors in preparing resolutions for the Annual Shareholder Meeting for the approval of compensation
- Develop proposals for guidelines for the compensation of the Board of Directors and Executive Committee
- Review stock ownership plans and recommend adjustments as appropriate
- Propose new Board members and Executive Committee members for appointment
- Provide support to the CEO in evaluating candidates for the Executive Committee

In fiscal year 2022, the NCC handled the following compensation- and nomination-related tasks on behalf of the Board of Directors:

- Identification and assessment of potential candidates for positions on the Board based on predefined criteria, and recommendation to the full Board regarding their nomination for election or re-election at the Shareholder Meeting.
- Identification and assessment of potential candidates for positions on the Executive Committee based on predefined criteria, and recommendations to the full Board.
- Review of the succession planning and of the list of possible substitutes in case of absences on the Executive Committee, and preparation of corresponding proposals to the full Board.
- Recommendation to the full Board for approval of the annual compensation report.

In the year under review, the Committee held eight meetings, all of which were attended by both of its members, as well as by Luigi Cornacchia, Global Head of HR, as secretary. In an advisory role, the Chair of the Board and the CEO also attended. The Committee may invite other Board members, Executive Committee members and specialists to its meetings as required. However, the members of the Executive Committee do not attend the compensation-related Board meetings and do not have a say in their compensation. The NCC chair briefs the Board of Directors on the activities at the next Board meeting and submits the necessary proposals and recommendations. Minutes of the NCC meetings are taken and signed by the chair of the NCC and its secretary. Once the minutes are approved, they are circulated to all members of the Board.

Audit Committee

The Audit Committee supports the full Board in exercising oversight of accounting and financial reporting and in monitoring compliance with legal requirements. The Committee has the following responsibilities in particular:

- Evaluate the structure and form of the Group's accounting system
- Gauge the effectiveness of the independent auditors and the internal controls; evaluate the coordination of external and internal auditing, and review the performance and compensation of the external independent auditors
- Evaluate the effectiveness of risk management
- Review the financial reporting to shareholders and the public
- Issue directions to the internal audit function and, as may be required on a case-by-case basis by the resulting findings, issue directions to the Executive Committee

During the fiscal year, four meetings were held by the Audit Committee. They were attended by the external auditors, internal auditors, the CEO and the CFO. The Committee may invite other Board members, Executive Committee members and specialists to its meetings as required. At each Board meeting, the Audit Committee reports on its activities to the Board of Directors and submits the necessary proposals and recommendations to the Board.

Technology Committee

The Technology Committee provides support to the full Board in matters of technology. The Committee has the following responsibilities in particular:

- Monitor international developments in technology and evaluate the emerging trends for their relevance to the Comet Group
- Assess the Group's internal research and development activities
- Ensure the Group holds at least one technology day or equivalent event per year

The Committee meets as often as business requires. In fiscal year 2022, it held four meetings. During the year the appraisal of technology sector developments, as well as the development measures taken by the Group, were regularly discussed with the division presidents in the course of the Committee meetings and the Board's scheduled meetings.

Division of authority

The Board of Directors is responsible for the overall direction and management of the Group and for the supervision of its most senior operational management. The non-delegable and inalienable duties of the Board of Directors are established by article 716a of the Swiss Code of Obligations. The Board's specific responsibilities and scope of authority are set out in the Company's Organizational Regulations and include the following areas among others:

- Determine the Group's strategic direction and financial targets and allocate the resources required to achieve them
- Establish the Group's objectives, business policy and strategy, and organizational structure
- Approve the rolling short- and medium-term financial plans
- Approve the acquisition and disposal of subsidiaries and of equity interests in other companies, and approve collaborations with other firms
- Approve the purchase and sale of real estate
- Appoint and withdraw members of the Group's Executive Committee and the presidents of its subsidiaries and exercise oversight and control of their activities

The Board of Directors has delegated all operational management of the Group to the CEO and the Executive Committee, except as otherwise required by law, the Company's Articles of Association and the Organizational Regulations. The CEO and Executive Committee have the necessary powers to execute the business strategy within the parameters set by the Board of Directors. In particular, the CEO has the authority to:

- Manage the Comet Group, implement the Board's strategic directions and decisions, and ensure timely and appropriate reporting to the Board
- Develop business targets within the general objectives established by the Board and present proposals for the rolling forecasts and for the strategic multi-year planning
- Request items of business to be placed on the agenda of Board meetings, prepare such business for transaction by the Board, and ensure the implementation of the Board's decisions

- Implement an internal control and management information system based on the specifications of the Board
- Regularly review the business risks, and establish a Board-approved risk management system for this purpose
- Regularly review the degree of achievement of the financial targets and strategic goals, as well as the Group's liquidity
- The members of the Executive Committee report to the CEO

Monitoring and control with respect to the Executive Committee

The Chair of the Board may attend the meetings of the Executive Committee and receives the minutes of all its meetings. The Board of Directors also receives regular reports on the course of business from the Executive Committee at Board meetings. In the case of extraordinary events, the Executive Committee informs the Board immediately. The CEO and CFO attend all regular meetings of the Board. At least one to two times per year, in the context of Board meetings, the other members of the Executive Committee also report to the Board on their business area.

Management information system

The monthly financial reporting by the Executive Committee on the current course of business and important transactions gives the full Board of Directors the information needed to properly discharge its responsibilities. The standardized internal reporting of the Group consists of the IFRS-based consolidated balance sheet, statement of income and cash flow statement, as well as detailed management reporting. Complementing the monthly consolidated financial statements and a comprehensive range of financial ratios, the management reporting presents and comments upon additional information such as new orders and order backlog, staffing levels and accounts past due, provided in table and chart form. This data is presented both by division and on a consolidated basis for the Group and is compared to the prior year and the rolling forecast. The resulting insights and actions are discussed monthly by the Executive Committee. All monthly financial statements are submitted to the Board of Directors, which discusses them at its meetings. As a longer-term control tool, a rolling multi-year plan is prepared annually for the subsequent three years. In addition, every quarter, management generates a rolling forecast for the following five quarters. These forward-looking control tools, which are accompanied by detailed commentary and documented with charts, enable the Board to continually evaluate the financial effectiveness of the adopted business strategy and then to take action if and as required.

Internal audit

The internal audit function provides an objective and effective value-added internal audit service using a systematic and disciplined approach to assist management in monitoring compliance, controlling risks and improving the effectiveness and efficiency of internal control systems and governance processes.

The internal auditor reports directly to the Audit Committee of the Board of Directors, at least twice per year and more frequently as required. On completion of each audit, an audit report is prepared and is discussed in the Executive Committee and reviewed with the national lead personnel responsible (typically the local company presidents responsible for the relevant business) and/or the persons directly affected by the audit, in order to initiate the implementation of the planned

measures. The internal auditor then prepares a final audit report for the Board of Directors, with a corresponding action plan. The reporting is based on the current audit priorities approved by the Board each year. The nature of the coordination and cooperation between the internal audit function and the external audit firm, complete with the identification of the respective responsibilities, has been specified in writing and approved by the Board.

Comet entered into an internal audit outsourcing service agreement with KPMG AG Switzerland effective January 1, 2022. The internal audit function is functionally reporting to the Audit Committee and administratively to the Group CFO. The compensation is determined by the amount of work performed under the service agreement and approved by the Audit Committee.

The following audits were performed in the fiscal year:

- Review of the compliance management system
- Review of the payroll processing cycle at Comet AG, Flamatt, Switzerland
- Health check of the PCT operations in San Jose, CA, USA (Comet Technologies USA, Inc., Shelton, CT, USA)
- Review of SAP access rights management
- Health check at Comet Technologies Malaysia Sdn. Bhd., Penang, Malaysia

Risk management system

Risk management includes the annual evaluation of strategy by the Board of Directors and the assessment by the Executive Committee of insurance cover, of the general business risks and of the major balance sheet items. The approach to risk management is described in a risk strategy approved by the Board and is specified in a written risk management procedure for implementation by the Executive Committee. The significant risks in the individual business areas and departments are identified in quarterly working group sessions and systematically described and categorized in a risk matrix. The risks are assessed using a risk rating based on the probability of occurrence and the potential severity of loss, as well as by calculating potential absolute financial risk. For the risks classified as important, action plans are formulated to minimize the probability and/or potential severity of loss. The Group's Executive Committee regularly reviews the effectiveness of the actions taken and decides on a potential updating of the risk portfolio. Newly identified risks are added to the portfolio and action plans are formulated to manage them. Through separate reports, the Audit Committee at each of its meetings is kept advised of the current assessment of the Group's risks.

Internal control system

Comet operates a system of internal control (the "internal control system") to provide reliable internal and external financial reporting and to prevent false information and errors in business transactions. The internal control system provides the necessary processes and controls to ensure that risks relating to the quality of the company's financial reporting can be detected and managed in a timely manner. A review of the existence of the processes and controls of the implemented internal control systems is carried out by the external auditors annually.

In the fiscal year, where required, Comet further expanded, trained or documented the existing internal control system. The internal control system is in use at all levels of the enterprise and in all significant locations. The significant risks and controls are in accordance with the objectives and quality requirements established by the Board of Directors. The controls are integrated in the respective processes and are periodically tested for effectiveness, logical sense and efficiency. The introduction of a uniform, systematic process for risk detection and assessment has enhanced the reliability and completeness of bookkeeping and the timeliness and dependability of financial reporting.

Executive Committee

The Executive Committee – the Group's most senior management below the Board level – is responsible for the operational management of the Group within the powers delegated to it.

As of July 1, 2022, Dionys van de Ven joined Comet as President of the X-Ray Systems division. On September 1, 2022, Stephan Haferl assumed operational leadership of the Group as CEO. Further, Michael Berger was appointed to succeed Stephan Haferl as President of the X-Ray Modules division. Outgoing CEO Kevin Crofton left the Comet Group on August 31, 2022. In the prior year, departures from the Comet Group were that of CIO Eric Dubuis on January 31, 2021, and Thomas Wenzel, President of the X-Ray Systems division, on April 30, 2021.

No member of the Executive Committee performed any consulting or third-party services for Comet Holding AG or any of its subsidiaries before their appointment to the Executive Committee.

As of December 31, 2022, the Group's Executive Committee had the following six members.



Stephan Haferl

(b. 1972, Swiss and Norwegian citizen) Chief Executive Officer since Sep. 1, 2022 and President of X-Ray Modules division from Jan. 1, 2018 until Aug. 30, 2022

Education

Dr. sc. tech. doctorate in mechanical and process engineering from ETH Zurich; Advanced Management Program, The Wharton School of the University of Pennsylvania, USA

Professional experience

2002 to 2007: various management positions at the Bartec Group, Sainte-Croix; from 2007: various management positions in Comet's X-Ray Technology business (VP of Supply Chain, VP of R&D, General Manager of Industrial X-Ray Technologies (IXT))


Elisabeth Pataki

(b. 1981, US citizen) Chief Financial Officer since Oct. 1, 2020

Education

Bachelor of Science degree in Finance and Spanish, Boston College, Mass., USA; Master of Business Administration, The Wharton School of the University of Pennsylvania, USA

Professional experience

2008 to 2015: various senior management positions at Raytheon Company in USA and Europe, including CFO for NATO Business Line, France, part of a joint venture between Raytheon and Thales Group; 2015 to 2020: Global Head of Internal Audit, Switzerland, at EF Education First, and before that CFO North America, USA, at EF


Keighley Peters

(b. 1971, UK citizen) Chief Information Officer since Dec. 28, 2020

Education

Master of Sciences in Information Technologies, University of Liverpool, UK

Professional experience

2011 to 2020: Senior Director Global IT, SPTS Technologies, UK; previously CIO in interim functions, IT Services Associate Director, Global IT, Cenduit Ltd and IT Consultant for the pharmaceutical industry and IT services sectors


Michael Kammerer

(b. 1961, Swiss citizen) President of Plasma Control Technologies division since Jan. 1, 2008

Education

Eidg. dipl. Einkäufer degree in procurement, SVME; MBA in strategy and procurement management from University of Birmingham, UK

Professional experience

1997 to 2000: Head of Purchasing and Logistics, Von Roll Betec AG, Thun; 2000 to 2002: Head of Purchasing and Logistics, Swisscom Solutions AG, Worblaufen; 2002 to 2007: Head of Purchasing and Supplier Quality Assurance, Automotive, Saia-Burgess AG, Murten/Johnson Electric, Hong Kong


Michael Berger

(b. 1973, Swiss citizen) President of X-Ray Modules division since Sep. 1, 2022

Education

Executive Master of Marketing Management, Bern University of Applied Sciences (BFH)

Professional experience

2003 to 2005: manager of the production department at Band Cooperative, Bern; 2005 to 2013: various executive management positions at Teltronic, Biberist; 2013 to 2018: Production Manager, X-Ray Technology, Comet; 2018 to 2022: VP of Operations of Industrial X-Ray Modules, Engineering and Supply Chain, Comet



Dionys van de Ven
(b. 1968, Dutch citizen)
President of X-Ray
Systems division since
Jul. 1, 2022

Education

Master's degree in mechanical engineering, Eindhoven University of Technology, Eindhoven, Netherlands

Professional experience

2007 to 2017: Senior Director of Customer Programs, Service and R&D at Philips Healthcare, Hamburg, Germany; 2017 to 2021: Managing Director of Baker Hughes Digital Solutions GmbH, Cologne area, Germany; 2017 to 2020: Chief Technology Officer of Waygate Technologies, Cologne area, Germany; 2018 to 2020 member of the Board of Directors of GE Inspection Robotics, Zurich, Switzerland; 2020 to 2022: Executive Business Leader of x-ray business unit at Waygate Technologies, Germany

Activities and interests outside the Group

Article 27 of the Articles of Association, which is compliant with the OAEC, specifies the allowable number of other external positions that members of the Executive Committee may hold on top management or supervisory bodies as follows:

- Members of the Executive Committee may each not hold more than one external position on the top management or supervisory body of an exchange-traded (i.e., listed) company and not more than four such external positions in non-listed companies.
- Not more than ten such positions may be held in associations, non-profit foundations, family foundations and employee pension funds.
- Positions in companies controlled by Comet Holding AG, or positions controlled by it, are not subject to restriction.

Some members of the Executive Committee hold board positions at subsidiaries of the Group. In addition, as of December 31, 2022, Stephan Haferl was a board member of Belimed AG, Zug and Michael Berger was a board member of Band Cooperative, Bern. The other members of the Executive Committee did not hold positions outside Comet on management or supervisory bodies of significant Swiss or foreign private sector or public sector companies, institutions or foundations at the balance sheet date. Therefore, no member of the Executive Committee of Comet Holding AG exceeded any limits for additional positions.

Management contracts

As of December 31, 2022, Comet had not entered into any management contracts with companies or natural persons not belonging to the Group (prior year: nil).

Disclosure of potential conflicts of interest

No member of the Executive Committee had any material business relationships with Comet Holding AG or any of its subsidiaries in fiscal year 2021 or 2022. In the event of a potential or impending conflict of interest, the Executive Committee member concerned is required to inform the Chair of the Board of Directors immediately.

Compensation, shareholdings and loans

Information regarding compensation and loans relating to members of the Board of Directors and the Executive Committee are set out in the compensation report. Information on their shareholdings of Comet stock is disclosed in the separate financial statements of Comet Holding AG in note 6, "Disclosure of shareholdings".

Shareholders' participation rights

Shareholders' participation rights (such as rights with respect to voting), are set down in the Swiss Code of Obligations, and this legal framework is supplemented by provisions in the Articles of Association of the Company. The Articles of Association can be found on the Company's website at <https://www.comet-group.com/en/investors/downloads>.

Voting rights restrictions and representation

Each share that is registered carries one vote, subject to the provisions on nominee shareholders in article 5 of the Articles of Association. The Board of Directors registers nominees as holding voting shares only up to a maximum of 5% of the capital stock recorded in the Swiss commercial register of companies. Further information is provided in the section "Capital structure"/"Limitations on transferability and nominee registration".

Proxy voting

At the Annual Shareholder Meeting, the shareholders elect an independent proxy. The term of office of the independent proxy is one year, ending at the conclusion of the next Annual Shareholder Meeting. Re-election for consecutive terms is permitted.

A shareholder may be represented at the Annual Shareholder Meeting by the independent proxy, by the shareholder's legal representative or – under a written power of attorney – by another shareholder entitled to vote. Powers of attorney and instructions may be given in writing or, to the independent proxy, may also be given electronically. The Board of Directors ensures that the shareholders have the opportunity to use electronic means to authorize and instruct the independent proxy.

Calling of the Annual Shareholder Meeting

The Annual Shareholder Meeting is called by the Board of Directors or, if necessary, by the independent auditors. Notice of the Annual Shareholder Meeting is sent to the shareholders of record by mail at least 20 days before the meeting date.

The notice of the Annual Shareholder Meeting states the day, time and place of the meeting, the agenda items as well as the proposals by the Board of Directors and, if applicable, names the shareholders who requested the Shareholder Meeting or the inclusion of a business item on the agenda, and states the nature of the shareholder proposal(s).

Inclusion of items on the agenda

Under the Articles of Association, shareholders representing at least 3% of the total capital stock outstanding at the time may request items of business to be included in the agenda. Shareholders' requests under article 699 para. 3 of the Swiss Code of Obligations to place business on the Meeting agenda, and the actual shareholder proposal

involved, must be submitted to the Board of Directors in writing no later than 35 days before the Shareholder Meeting in question.

Entries in the share register

In accordance with article 12 of the Articles of Association, in the notice of the Shareholder Meeting the Board of Directors announces the record date (at which registration in the share register is required for participation in and voting at the meeting) and the details of the written and electronic proxies and instructions.

The share register is closed to new entries from the record date until and including the day of the Shareholder Meeting. No exception to this rule was made in the year under review nor at any previous Shareholder Meeting. Shareholders who sell their stock before the Shareholder Meeting are not entitled to vote the shares sold.

Further information is provided in the section "Capital structure"/"Limitations on transferability and nominee registration".

Changes of control and defense measures

Requirement to make a public tender offer

Under article 135 of the Financial Market Infrastructure Act (FinMIA), any party whose shareholding reaches 33 ⅓ % or more of all voting rights must make a public tender offer. The Articles of Association of Comet Holding AG contain neither an opting-up clause nor an opting-out clause; this means that they neither raise this percentage threshold, nor waive the requirement of a tender offer.

Provisions on changes of control

With respect to members of the Board of Directors and the Executive Committee, there are no contractual obligations of unusually long duration, nor provisions for termination benefits, that would result from a change of control. Under the share-based compensation plan, the Board of Directors may in its discretion decide to early-terminate the holding period for the stock awarded as performance-based compensation. Except as otherwise required by law, in the event of an attempted change of control of Comet Holding AG, the holding period on stock ends when a public tender offer is validly made.

Auditors

Duration of the mandate and term of office of the lead auditor

The independent audit firm is appointed annually by the Annual Shareholder Meeting following a proposal submitted by the Board of Directors. Re-election is permitted.

Ernst & Young AG (EY), Switzerland, have been the independent auditors of Comet Holding AG since 1999. The lead audit partner, Martin Mattes, has been responsible for the engagement since fiscal year 2021. The rotation cycle for the lead audit partner at EY is seven years.

Comet has completed an audit tender with three of the big-four accounting firms participating. Based on the selection criteria defined in the audit tender process, the Board of Directors will propose to the Annual Shareholder Meeting to re-elect Ernst & Young AG (EY) as

Comet's independent auditor for the annual term starting January 1, 2023.

Audit fees

The compensation of EY for services in connection with auditing the consolidated financial statements and as the independent audit firm for most Group companies amounted to CHF 382 thousand (prior year: CHF 373 thousand).

Including the other audit firms, the total audit fees in the year under review amounted to CHF 484 thousand (prior year: CHF 437 thousand). The audit fees are set annually upon discussion with the Audit Committee and are based on the audit scope at the individual Group companies, any special in-depth audits and the auditing of protection against specifically identified risks.

Additional fees

In the fiscal year, EY received the following compensation for consulting services in connection with accounting and tax matters:

In thousands of CHF	2022	2021
Audit-related consulting services	12	10
Tax consulting services	180	206
Total consulting services	192	216

Information instruments pertaining to the external audit

The Audit Committee of the Board of Directors annually reviews the performance, compensation and independence of the audit firm. The Committee also examines the scope of the independent audit, reviews action plans developed to resolve any issues identified in the audit and recommends candidate independent auditors to the Board to propose for election by the Annual Shareholder Meeting. The Board has not specified a fixed rotation cycle. In selecting the external auditors, particular importance is attached to independence and documented experience.

After the first six months of the year, the Audit Committee at its meeting discusses the unaudited half-year results with the independent auditors. In addition, the annual financial statements are planned and the auditing costs for the fiscal year are approved. Additional meetings are held as needed.

After the audit of the annual financial statements, the Audit Committee convenes for a meeting at which it discusses the audited annual report for the fiscal year with the independent auditors. The audit firm reports its findings on the basis of a comprehensive report to the Board of Directors and through the reports of the independent auditors to the Annual Shareholder Meeting.

Further information is provided in the section "Board of Directors"/"Audit Committee".

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Compensation Report 2022

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01 Introduction

The compensation report has been prepared in accordance with the Ordinance against Excessive Compensation in Listed Stock Corporations (OAEC), the principles of the Swiss Code of Best Practice for Corporate Governance of *economiesuisse*, as well as the corporate governance reporting directive of the SIX Swiss Exchange (its Directive on Information Relating to Corporate Governance).

The compensation report discloses the compensation of the members of the Board of Directors and Executive Committee for fiscal years 2021 and 2022. The shareholdings of the Board and Executive Committee (disclosed in accordance with the Swiss Code of Obligations) are presented in the notes to the separate financial statements of Comet Holding AG within note 6, "Disclosure of shareholdings of the Board of Directors and Executive Committee". The expense for their compensation (disclosed in accordance with International Financial Reporting Standards) is presented in the consolidated financial statements of Comet Holding AG within note 30, "Compensation of the Board of Directors and Executive Committee".

02 OAEC-related provisions and compensation governance

02.1 OAEC-related provisions under the Articles of Association

Compensation-related provisions are specified in the Articles of Association (which are published on the Group's website at www.comet-group.com/en/investors/downloads) and implemented in corresponding Group regulations. Articles 21 to 28 of the Articles of Association govern compensation approval, the compensation of the Board of Directors and Executive Committee, the composition of performance-based compensation, and the terms of stock awards.

Every year, the Board of Directors submits to the Annual Shareholder Meeting for approval its proposals for the maximum aggregate amounts of compensation of the Board of Directors and of the Executive Committee.

02.2 Shareholders' say on pay

Under the OAEC and the Articles of Association of Comet Holding AG, the amounts of the respective aggregate compensation of the Board of Directors and Executive Committee require shareholder approval in a binding vote at the Shareholder Meeting. Specifically, under article 21 of the Articles of Association of Comet Holding AG, shareholders vote on the following:

- The compensation of the Board of Directors for the coming term of office (prospectively)
- The fixed compensation of the Executive Committee for the next fiscal year after the year of the Annual Shareholder Meeting (prospectively)
- The performance-based compensation of the Executive Committee for the last fiscal year before the year of the Annual Shareholder Meeting (retrospectively)

The prospectively binding voting in combination with retroactive approval of the performance-related remuneration give shareholders an extensive "say on pay".

03 Determination of compensation and compensation principles

03.1 Determination of compensation

The design, regular review and evaluation of the compensation system are the responsibility of the Nomination and Compensation Committee (NCC). The composition and responsibilities of the NCC are outlined in the corporate governance report.

Subject to the limits of the maximum aggregate amounts approved by the Annual Shareholder Meeting, the Board of Directors annually prepares the compensation proposals, as follows:

Decision on	CEO	NCC	Board of Directors	Shareholder Meeting
Compensation policy and guidelines under the Articles of Association		Proposes	Approves	
Maximum aggregate compensation of the Board of Directors		Proposes	Reviews	Binding vote
Individual compensation of Board members		Proposes	Approves	
Fixed compensation of the CEO		Proposes	Approves	Binding vote as part of vote on aggregate fixed compensation of Executive Committee
Fixed compensation of the other members of the Executive Committee	Proposes	Reviews	Approves	Binding vote as part of vote on aggregate fixed compensation of Executive Committee
Profit-sharing and LTIP plans of the CEO		Proposes	Approves	Binding vote as part of vote on aggregate variable compensation of Executive Committee
Profit-sharing and LTIP plans of the other members of the Executive Committee	Proposes	Reviews	Approves	Binding vote as part of vote on aggregate variable compensation of Executive Committee

On behalf of the Board of Directors, the external audit firm verifies whether the quantitative disclosures on compensation, loans and other credit made in the compensation report pursuant to sections 14 to 16 OAEC comply with the law and the OAEC.

03.2 Compensation of the Board of Directors

Compensation principles

Every year, the Board of Directors submits its proposal for the maximum aggregate amount of Board compensation to the Annual Shareholder Meeting for approval. The amounts of Board members' compensation are set to reflect the Comet Group's industry environment and are regularly reviewed against benchmarks. The latest such review was performed in fiscal year 2021. The compensation details are specified in a Board-approved compensation plan in the form of a set of regulations.

The compensation consists of a combination of a base retainer and fees for committee work. This structure is consistent with standard market practice for companies listed on the SIX Swiss Exchange. During fiscal year 2022, in order to better reflect market and company performance, the stock component (shares) was increased to 40% of compensation (from the level of one-third applicable until the 2022 Annual Shareholder Meeting) and the cash component decreased to 60% of compensation (from the level of two-thirds applicable until the 2022 Annual Shareholder Meeting).

Structure of the compensation system

Overview of Board of Directors compensation structure up to the Annual Shareholder Meeting on April 14, 2022:

In CHF (gross)

	Cash portion of retainer (two-thirds)	Stock portion of retainer (one-third)	Total reported value of compensation	Flat expense allowance (additional)
Chair of the Board	132,000	66,000	198,000	8,000
Vice Chair of the Board	66,000	33,000	99,000	4,000
Member of the Board	66,000	33,000	99,000	4,000

Overview of Board of Directors compensation structure after the Annual Shareholder Meeting on April 14, 2022:

In CHF (gross)

	Base retainer	Fees for committee work		Flat expense allowance (additional)
Function		Chair of AC, NCC or TC	Member of AC, NCC or TC	
Chair of the Board	250,000	–	–	12,000
Vice Chair of the Board	120,000	25,000	15,000	6,000
Member of the Board	100,000	25,000	15,000	5,000

The sum of the base retainer and fees for committee work is split into a cash portion of 60% and a share portion of 40%, in accordance with the decision to this effect taken at the Annual Shareholder Meeting on April 14, 2022.

The reported compensation in section 4.1 includes the cash portion of the retainer, the value of the stock portion and, additionally, the actual employer contributions to social security plans. In addition, a flat expense allowance is provided, which is paid in cash. This allowance quali-

fies as reimbursement of expenses and is therefore not considered part of the compensation itself.

The Board members' normal term of office begins on the date following the day of the Annual Shareholder Meeting that elects them and ends on the date of the next Annual Shareholder Meeting. When a new member joins the Board of Directors, the compensation is paid on a pro-rated basis from the day of election. If a member leaves the Board before the end of a term, the retainer is calculated on a pro-rated basis to the date of departure. In the case of pro-rated retainers as well, two-thirds is paid in cash (after the 2022 Annual Shareholder Meeting: 60% paid in cash) and one-third is paid in stock (after the 2022 Annual Shareholder Meeting: 40% paid in stock).

03.3 Compensation of the Executive Committee

Compensation principles

The compensation system is designed to attract and retain excellent management and specialist staff. Comet seeks to set compensation levels that reflect the individual levels of skills and responsibility in the Group and that bear comparison with other employers competing with Comet for talent. This aim is supported by a fair system of remuneration designed to match levels of pay offered by listed peer companies.

The compensation elements thus take into account short-term and long-term aspects of sustainable company performance and development. Comet believes that its remuneration architecture creates an effective link between compensation and performance that generates lasting value for shareholders.

The compensation of the Executive Committee is specified in Board-approved regulations. The CEO recommends the amounts of fixed compensation for the other Executive Committee members to the NCC. The NCC then prepares a specific proposal for the amounts of the individual fixed compensation of the CEO and each of the other Executive Committee members, for approval by the full Board of Directors. The NCC also bases its proposals on general experience and on levels of compensation at peer companies. The full Board of Directors periodically reviews, sets and approves the compensation levels, based on the proposal of the NCC. The latest review of the compensation of the Executive Committee was performed in fiscal year 2022 with the support of Korn Ferry, independent executive compensation experts. The analysis was conducted using the Korn Ferry Hay Guide Chart® Profile method of job evaluation, which provides a consistent and objective framework for analyzing organizational structures and developing an effective reward strategy.

Every year, the Board of Directors submits its proposals for the maximum aggregate amounts of Executive Committee compensation to the Annual Shareholder Meeting for approval, specifically:

- The fixed compensation of the Executive Committee for the next fiscal year after the year of the Annual Shareholder Meeting (prospectively)
- The performance-based compensation of the Executive Committee for the last fiscal year before the year of the Annual Shareholder Meeting (retrospectively)

To new members joining the Executive Committee during a period for which the Shareholder Meeting has already approved the compensa-

tion, Comet Holding AG or its subsidiaries are authorized to pay an additional amount if the already approved maximum aggregate amount is not sufficient to cover the compensation. The aggregate additional amount per compensation period must not exceed 40% of the approved maximum aggregate amount of compensation of the Executive Committee.

Structure of the compensation system

The remuneration consists of fixed compensation and performance-based variable compensation. The total compensation takes into account the recipient's position and level of responsibility. The variable compensation of the Executive Committee members is structured as a short-term incentive plan (STIP) and a long-term incentive plan (LTIP). It is designed to heighten the commitment of the CEO and the other Executive Committee members. The variable compensation is based on the regulations approved by the Board of Directors. The requirement for this group of individuals to draw part of their short-term incentive plan (STIP) compensation in stock is detailed in a separate set of regulations.

Two-thirds (66.67%) of the compensation under the STIP is paid in cash and one-third (33.33%) of it is paid in stock. The compensation under the LTIP is paid in stock only. The grant price, at which the stock is awarded and transferred to recipients, is the average closing market price of the stock in the period between (and excluding) the date of the annual results press conference and the date of the Annual Shareholder Meeting.

The stock transferred under the STIP is subject to a holding period of three years from the date of the award, during which it cannot be sold. However, all other shareholder rights are effective during the holding period, including rights to dividends and similar distributions and the right to participate in Shareholder Meetings. Except as otherwise required by law, in the event of an attempted change of control of Comet Holding AG, the holding period on stock ends when a public tender offer is validly made. The holding period remains in place in all other cases, including in the event of termination. The stock awarded under the LTIP does not have a holding period.

There are individual upper limits on the total variable compensation of the CEO and the other members of the Executive Committee. The upper limit thus caps the individual's combined total of STIP (profit-sharing) and LTIP compensation. For the CEO this maximum (the upper limit for the combined total of STIP compensation and LTIP stock) is 200% of the fixed compensation. For each of the other members of the Executive Committee, this upper limit for the combined total of STIP compensation and LTIP stock is 150% of the fixed compensation.

The members of the Executive Committee have employment agreements with a notice period of not more than nine months. There is no entitlement to hiring bonuses or termination benefits of any kind, nor any provision in case of a change of control except for the waiving of the remaining holding period on the stock awarded under the STIP.

The compensation system for the members of the Executive Committee is structured as follows:

Type of compensation	Form of delivery	Purpose	Drivers
Fixed compensation	Monthly payment in cash	Pay for position	Nature and level of position, individual qualifications, market conditions
Short-term profit-sharing plan (STIP)	Annual payment in cash	Profit-sharing based on corporate financial results	Corporate financial results in terms of profitable growth
Short-term profit-sharing plan (STIP)	Annual payment in stock (with a holding period)	Long-term alignment with interests of shareholders	Corporate financial results in terms of profitable growth
Long-term incentive plan (LTIP)	Annual payment in stock (without holding period)	Alignment with long-term corporate targets	Corporate financial results relative to the peer group in terms of achievement of two performance targets for growth and profitability over a three-year period
Social benefits	Company pension, social security contributions, short-term disability and accident insurance	Risk protection	Local legislation and voluntary benefits in line with market
Flat expense allowance	Monthly payment in cash	Defraying of minor expenses	Local legislation, tax authorities
Other benefits, incl. benefits in kind	Costs paid directly by company or reimbursed in cash	Pay for position	Local market practice

Fixed compensation

All members of the Executive Committee receive fixed compensation that is paid monthly, as well as a flat expense allowance. The fixed compensation is determined by the individual's amount of responsibility, role, performance, experience and skills, and by local market conditions. These elements of compensation are paid in cash.

Short-term profit-sharing compensation (STIP)

In addition to the fixed compensation, the Executive Committee members are eligible for STIP profit-sharing compensation. The total pool of profit-sharing compensation is calculated as a percentage of the consolidated net income of the Group. This percentage rate is dependent upon the Group's rate of sales growth compared with the prior year. For fiscal year 2022, the percentage rate was determined according to the following model, unchanged from fiscal year 2021:

Sales growth	Percentage of net income
Less than 5%	15%
5%–15%	Linear increase between 15% and 25%
More than 15%	25%

In fiscal year 2022, 24.0% of the Group's total consolidated net income (after profit-sharing) was accrued for distribution as short-term profit-sharing compensation (prior year: 25%).

The members of the Executive Committee and all employees eligible for profit-sharing are assigned to one of five compensation groups. These five groups consist of the CEO, the other members of the Executive Committee, and, subdivided into three groups, the other eligible employees. Each compensation group is assigned a different multiplier. The values of the multipliers are set by the Board of Directors of Comet Holding AG. Within a given compensation group, the same multiplier is used for each member of the group. This multiplier together

with the gross annual base salary determines the respective share assigned to the individual member of the Executive Committee and individual employee in the allocation of the total profit-sharing pool. The individual share of the total profit-sharing pool (under the STIP) is calculated using the following model:

a) Calculation of individual's percentage share of total profit-sharing pool

$$\frac{\text{Gross base salary of employee} \times \text{multiplier} \times 100}{\text{Total weighted gross salaries of all staff}^1} = \% \text{ share of total profit-sharing pool}$$

¹ Represents the aggregate of the multiplier-weighted gross salaries of all employees including the members of the Executive Committee

b) Calculation of effective profit-sharing compensation

$$\% \text{ share of total profit-sharing pool} \times \text{amount of profit-sharing pool that is actually distributed}$$

At least 80% of the profit-sharing pool is allocated among the members of the Executive Committee and all employees, using a general allocation formula. Up to an aggregate maximum of 20% of the profit-sharing pool may be allocated selectively to individual members of the Executive Committee or individual other employees, using an individual allocation formula. This is to enable the Board and the CEO to recognize individual performance distinctively. Performance is evaluated by the Board and CEO at the end of the fiscal year, and a decision is made on whether to allocate part or all of the 20% individual allocation pool to individual employees. Any unused portion of the individual allocation pool is also distributed by the general allocation formula. The Board of Directors did not allocate any of the 20% individual allocation pool in the year under review.

A precondition for paying any profit-sharing compensation is that, after the accrual of this distribution, the Group is still able to report positive consolidated net income. Members of the Executive Committee, or other employees, joining Comet intra-year participate in profit-sharing on a pro-rated basis. In the event of intra-year termination of the employment relationship, the pro-rated amount due is calculated based on the approved consolidated financial statements and is paid out in cash and stock upon approval of the profit-sharing compensation by the Annual Shareholder Meeting. Profit-sharing awards to the CEO and the other members of the Executive Committee are approved by the Board, with ratification by the shareholders at the Annual Shareholder Meeting as part of the binding retrospective vote on the compensation of the Executive Committee.

Long-term profit-sharing compensation (LTIP)

The aim of the LTIP, which was introduced in fiscal year 2017, is to tie the CEO and the other members of the Executive Committee more closely to the company and to strengthen the alignment of part of their compensation with the achievement of long-term corporate targets. Stock transferred under the LTIP does not have a holding period.

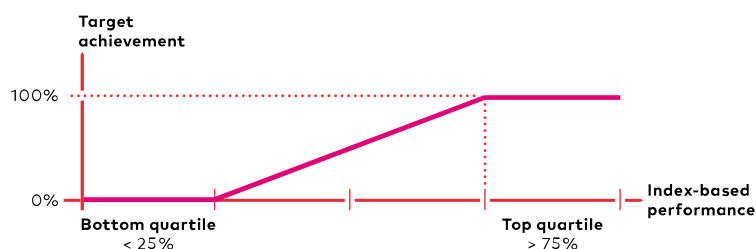
The amount of the LTIP compensation is dependent on the value of the stock earned as short-term profit-sharing compensation (STIP) in the previous three years. LTIP stock is granted each year based on the extent to which the performance targets for the previous three years were achieved. The LTIP amount is based on performance against the following two targets:

- a growth target (T₁), and
- a profitability target (T₂)

Target achievement is measured relative to a group of 13 listed Swiss manufacturing companies similar to Comet in revenue size and market capitalization.

Autoneum Holding AG	Interroll Holding AG	Rieter Holding AG
Feintool International Holding AG	Kardex Holding AG	Tecan Group AG
Gurit Holding AG	Komax Holding AG	u-blox Holding AG
Huber+Suhner AG	Phoenix Mecano AG	VAT Group AG
INFICON Holding AG		

For both targets, target achievement is assessed by measuring the index-based relative performance, thus comparing the Group's performance with that of the companies in the peer group. The degree of target achievement is 0% if the Group's result ranks in the bottom quartile of the index (i.e., among the 25% of companies with the lowest performance). Target achievement is 100% (the maximum) if the result attained is in the top quartile of the index (i.e., in the top 25% of all companies). If the result falls between these two outcomes, the percentage of target achievement is interpolated on a straight-line basis between 0% and 100%.



The value of the stock granted under the LTIP is based on the average annual achievement of the two performance targets (T₁ and T₂, in percent) multiplied by the average annual value of the stock (V_s) actually transferred to employees in the preceding three years as STIP short-term profit-sharing compensation, multiplied by a calibration factor C:

$$\text{LTIP} = (T_1 + T_2)_s * V_s * C$$

Growth target T₁: The growth target is defined in terms of the compound annual growth rate (CAGR) of sales for the respective last three years. The performance on this metric is compared with that of the peer group (a group of manufacturing firms listed on the Swiss stock exchange). The achievement of the growth target is measured by the relationship of the average CAGR of the Group over the last three years to the results of the peer group.

Profitability target T₂: The profitability target is defined in terms of the average ratio of ROCE to WACC for the respective last three years (ratio of return on capital employed to weighted average cost of capital). The performance on this metric is compared with that of the peer group (a group of manufacturing firms listed on the Swiss stock exchange). The achievement of the profitability target is measured by the relationship of the average ROCE-to-WACC ratio of the Group over the last three years to the results of the peer group.

Calibration factor C: The calibration factor, which is a numerical value in the range from 0 to 1, is set by the Board of Directors. The calibration is normally reviewed every three years and, when necessary, adjusted so that the long-term incentive corresponds to the performance of the company and the purpose of the LTIP. When doing so, the Board ensures the adjustment is fair to all participants. No such adjustment was made in the fiscal year.

Calculation of the value V_s of the average annual amount of STIP stock transferred: The amount of stock transferred under the LTIP is based on the value of the stock transferred under the short-term profit-sharing plan (STIP) over the last three years. That value of transferred STIP stock is measured as of the time of its transfer. For determining the amount of LTIP stock to be transferred in year n , the underlying average annual value of STIP stock, V_s , is calculated as follows:

$$V_s = \frac{1}{3} (V_{n-2} + V_{n-1} + V_n)$$

Where V_{n-2} represents the value of the stock transferred in year $n-2$, V_{n-1} represents the value of the stock transferred in year $n-1$, and V_n represents the value of the stock transferred in year n .

Target achievement is determined at the end of each year. As the data for the peer group companies only becomes available with a time lag, the current year-end data for Comet is compared with that data for the peer group which is available at December 31.

The amount of stock to be transferred under the LTIP is based on the amount of stock already transferred under the short-term profit-sharing plan and is thus inherently pro-rated in the case of an intra-year hire or promotion. Employees who have given or received notice of termination of employment are not entitled to the LTIP compensation for the year of their departure.

The long-term profit-sharing compensation is disbursed on the basis of the approved consolidated financial statements and the approval of the profit-sharing compensation by the Annual Shareholder Meeting of Comet Holding AG in the subsequent year.

In the event of a public tender offer for the stock of Comet Holding AG, the LTIP compensation for the fiscal years that are not yet compensated under the LTIP at the time the public tender offer is validly made, is paid entirely in cash instead of stock.

03.4 Compensation system for employees below the Executive Committee level

Compensation principles

The compensation systems for the Board of Directors and the Executive Committee, are covered in separate sections above.

The compensation system for Comet's other employees has two main elements: All employees receive fixed compensation, and employees eligible for profit-sharing under the STIP may earn a performance-based pay component.

Structure of the compensation system

Fixed compensation

All employees receive fixed compensation that is paid monthly in cash. The fixed compensation is determined by the individual's amount of responsibility, role, performance, experience and skills, and by local market conditions.

STIP

The calculation of an individual's effective profit-sharing compensation is based on that portion of the total profit-sharing pool which has been allocated by the general allocation formula. In addition to that general portion, the Board of Directors may award an individual share of profit. Unlike the Executive Committee, the STIP for other employees is settled in cash only (i.e., it has no stock portion and thus involves no holding period). Detailed information on the determination of STIP profit-sharing compensation for employees is provided in section 3.3, "Compensation of the Executive Committee".

04 Disclosure of compensation of the Board of Directors and Executive Committee

The following disclosures represent all compensation of the members of the Board of Directors and Executive Committee and their related parties¹ for fiscal years 2021 and 2022, disclosed in accordance with the Ordinance against Excessive Compensation in Listed Stock Corporations (OAEC). Further details on the included individuals and their positions in the Group are provided in the corporate governance report within this annual report.

¹ Related parties are persons outside Comet who are related to members of the Board of Directors or Executive Committee within the meaning of article 678 of the Swiss Code of Obligations by virtue of close personal or economic ties in law or in fact.

04.1 Members of the Board of Directors (including related parties)

The compensation of the Board of Directors is set at the Annual Shareholder Meeting for a period of one year. The Board's term of office, and therefore its annual compensation period, do not match the fiscal year.

The Annual Shareholder Meeting prospectively approves the Board's compensation for a period of one year, ending at the subsequent Annual Shareholder Meeting. The following tables show the actual compensation for the Board of Directors for fiscal year 2022 and 2021. As can be seen from the tables, the Board compensation for the term of office ending at the 2022 Annual Shareholder Meeting will be within the maximum aggregate amount approved by the Annual Shareholder Meeting. The aggregate amount of the Board's compensation is higher in fiscal year 2022 than in the prior fiscal year due to the increased number of Board members and an increase in individual compensation compared to the prior year.

Fiscal years 2021 and 2022

In CHF (gross)

	Total cash compensation ¹	Stock compensation ²	Total before social security contributions	Social security contributions ³	Total compensation in fiscal year 2022	Total compensation in fiscal year 2021
1/1/2021 to 4/22/2021						
Rolf Huber, Vice Chair						24,027
1/1/2022 to 12/31/2022						
Heinz Kundert, Chair	144,850	90,272	235,122	—	235,122	198,000
Mariel Hoch, Vice Chair	76,883	50,847	127,731	11,882	139,613	107,632
Gian-Luca Bona, member of the Board	74,883	49,419	124,303	11,497	135,800	107,632
Patrick Jany, member of the Board	68,883	45,136	114,019	10,343	124,363	107,632
Tosja Zywiets, member of the Board	64,883	42,281	107,164	—	107,164	66,000
4/14/2022 to 12/31/2022						
Edeltraud Leibrock, member of the Board	46,000	32,839	78,839	—	78,839	—
Total	476,383	310,794	787,178	33,723	820,901	610,923

Total Board compensation prospectively approved at the Annual Shareholder Meeting on April 14, 2022 and April 22, 2021, respectively

970,000 800,000

The total compensation paid to members of the Board of Directors (for the period from the Annual Shareholder Meeting to the year-end) plus estimated amounts yet to be paid in the following fiscal year (for the period from January to the next Annual Shareholder Meeting) are within the maximum aggregate amount approved by the Annual Shareholder Meeting indicated above

YES YES

- ¹ The compensation consists of a fixed retainer; two-thirds of it is paid in cash (after the 2022 Annual Shareholder Meeting: 60% paid in cash) and disclosed in this item.
- ² This item represents the one-third of the fixed retainer which is paid in stock (after the 2022 Annual Shareholder Meeting: 40% paid in stock). The actual transfer of the stock occurs in the subsequent year. The stock is subject to a holding period of three years from the date of the award, during which it cannot be sold.
- ³ This item represents employer contributions to social security plans and to the family allowance fund. No pension fund contributions, short-term disability insurance premiums or accident insurance premiums are paid.

04.2 Current and former members of the Executive Committee (including related parties)

A total of seven persons served as Executive Committee members during fiscal year 2022. On average for the fiscal year, this represented 6.0 full-time equivalents (prior year: 5.4). The total compensation of the current and former members of the Executive Committee, as well as the highest individual compensation, are presented in the table below. Former members of the Executive Committee are those members who were no longer active as of the year-end, but received compensation in the respective fiscal year.

Fiscal year 2022

In CHF (gross)

	Footnote	Current Executive Committee members ¹	Former Executive Committee members ²	Total, Executive Committee	Of which K. Crofton (CEO)
Fixed compensation (cash)	3	1,585,869	632,418	2,218,288	632,418
Short-term incentive compensation (STIP, cash)	4	1,314,022	722,495	2,036,518	722,495
Short-term incentive compensation (STIP, stock)	5	657,011	361,248	1,018,259	361,248
Long-term incentive compensation (LTIP, stock)	6	160,281	0	160,281	0
Subtotal		3,717,183	1,716,162	5,433,345	1,716,162
Other benefits, incl. benefits in kind	7	6,114	22,489	28,603	22,489
Employer contributions to social security plans	8	323,559	153,460	477,018	153,460
Retirement benefits	9	248,897	135,071	383,968	135,071
Total compensation to members of the Executive Committee		4,295,753	2,027,181	6,322,934	2,027,181

¹ The composition of and changes in the Executive Committee membership are presented in the corporate governance report.

² The employment contract of Kevin Crofton, the outgoing CEO, ended as of November 30, 2022.

- ³ For their work, the members of the Executive Committee receive a fixed compensation component, which is paid in cash. This item also includes any other, one-time cash compensation, such as length-of-service awards.
- ⁴ This item represents the portion of the STIP compensation paid in cash for 2022, which is calculated based on the criteria of the compensation system. The actual payment occurs in the respective subsequent year.
- ⁵ This item represents the portion of the STIP compensation paid in stock for 2022. The actual transfer of the stock occurs in the respective subsequent year and is disclosed at the execution price (the average share price in the period between publication of the annual results and the Annual Shareholder Meeting). The stock is subject to a holding period of three years from the date of the award, during which it cannot be sold.
- ⁶ This item represents the LTIP compensation awarded for 2022, all of which is paid in stock. The actual transfer of the stock occurs in the respective subsequent year. The shares are disclosed at the execution price (the average share price in the period between publication of the annual results and the Annual Shareholder Meeting).
- ⁷ This item represents the annual cost of public ground transportation for certain members of the Executive Committee for 2022 and tax advisory services for former Executive Committee members.
- ⁸ This item represents employer contributions to the old age and survivors (AHV) and unemployment insurance plans (ALV), to the family allowance fund (FAK) and to the short-term disability insurance and accident insurance plans.
- ⁹ This item represents employer contributions to the employee pension plans.

Fiscal year 2021					
In CHF (gross)	Footnote	Current Executive Committee members ¹	Former Executive Committee members ²	Total, Executive Committee	Of which K. Crofton (CEO)
Fixed compensation (cash)	³	2,006,699	—	2,006,699	650,000
Short-term incentive compensation (STIP, cash)	⁴	1,737,924	—	1,737,924	794,748
Short-term incentive compensation (STIP, stock)	⁵	868,962	—	868,962	397,374
Long-term incentive compensation (LTIP, stock)	⁶	104,595	—	104,595	44,297
Subtotal		4,718,180	—	4,718,180	1,886,419
Other benefits, incl. benefits in kind	⁷	24,776	—	24,776	20,112
Employer contributions to social security plans	⁸	436,750	—	436,750	180,360
Retirement benefits	⁹	310,659	—	310,659	148,580
Total compensation to members of the Executive Committee		5,490,365	—	5,490,365	2,235,471

¹ The composition of and changes in the Executive Committee membership are presented in the corporate governance report.

² In the fiscal year, no compensation was paid to former Executive Committee members.

³ For their work, the members of the Executive Committee receive a fixed compensation component, which is paid in cash. This item also includes any other, one-time cash compensation, such as length-of-service awards.

⁴ This item represents the portion of the STIP compensation paid in cash for 2021, which is calculated based on the criteria of the compensation system. The actual payment occurs in the respective subsequent year.

⁵ This item represents the portion of the STIP compensation paid in stock for 2021. The actual transfer of the stock occurs in the respective subsequent year and is disclosed at the execution price (the average share price in the period between publication of the annual results and the Annual Shareholder Meeting). The stock is subject to a holding period of three years from the date of the award, during which it cannot be sold.

⁶ This item represents the LTIP compensation awarded for 2021, all of which is paid in stock. The actual transfer of the stock occurs in the respective subsequent year. The shares are disclosed at the execution price (the average share price in the period between publication of the annual results and the Annual Shareholder Meeting).

⁷ This item represents the annual cost of public ground transportation for certain members of the Executive Committee for 2021.

⁸ This item represents employer contributions to the old age and survivors (AHV) and unemployment insurance plans (ALV), to the family allowance fund (FAK) and to the short-term disability insurance and accident insurance plans.

⁹ This item represents employer contributions to the employee pension plans.

04.3 Shareholders' say on pay regarding Executive Committee compensation and compensation mix

The tables below provide a comparison of the prospective approval of the fixed compensation and the retrospective approval of the variable compensation of the Executive Committee members by the Annual Shareholder Meeting. For fiscal years 2022 and 2021, the fixed compensation was within the maximum aggregate amount approved by the Annual Shareholder Meeting. In addition, the subsequent information provides an overview of the compensation mix for fiscal years 2022 and 2021.

In CHF (gross)	Total, Executive Committee	
	2022	2021
Fixed compensation		
Fixed compensation – cash portion	2,218,288	2,006,699
Employer contribution to social security and retirement plans that is based on fixed compensation and other benefits, incl. benefits in kind	594,790	522,432
Total fixed compensation	2,813,078	2,529,131
Total maximum fixed compensation prospectively approved by the preceding Annual Shareholder Meeting	3,500,000	3,500,000
Within the pre-approved limit	YES	YES

In CHF (gross)	Total, Executive Committee	
	2022	2021
Variable compensation		
Short-term incentive compensation (STIP) – cash portion	2,036,518	1,737,924
Short-term incentive compensation (STIP) – stock portion	1,018,259	868,962
Long-term incentive compensation (LTIP) – stock	160,281	104,595
Employer contribution to social security and retirement plans that is based on variable compensation	294,799	249,753
Total variable compensation	3,509,856	2,961,234
Total variable compensation retrospectively approved by the subsequent Annual Shareholder Meeting		2,961,234

In CHF (gross)	Total, Executive Committee	Highest-paid member of the Executive Committee	Total, Executive Committee	Highest-paid member of the Executive Committee
	2022	2022	2021	2021
Total compensation to members of the Executive Committee	6,233,934	2,027,181	5,490,365	2,235,471
Total fixed compensation in % of total compensation	44%	42%	46%	40%
Total variable compensation in % of total compensation	56%	58%	54%	60%
Variable compensation paid in cash in % of total STIP/LTIP variable compensation (excl. social security/retirement benefits)	63%	67%	64%	64%
Variable compensation paid in stock in % of total STIP/LTIP variable compensation (excl. social security/retirement benefits)	37%	33%	36%	36%

04.4 Supplementary information on compensation

In fiscal year 2022, no signing bonuses were paid to present or former members of the Board of Directors or of the Executive Committee (prior year: nil). No termination benefits were granted or paid (prior year: nil).

In fiscal year 2022, no transactions with related parties were recorded and no interim management contracts were in place (prior year: nil).

No loans or other credits were granted to members of the Board of Directors or Executive Committee in the year under review (prior year: nil). No loans or other credits were outstanding at the balance sheet date (prior year: nil). As well, Comet did not provide any guarantees or other security in the year under review (prior year: nil).

No material changes related to compensation have occurred after the balance sheet date of December 31, 2022.

05 Disclosure of shareholdings of the Board of Directors and Executive Committee

As of December 31, 2022, the members of the Board of Directors and Executive Committee held a combined total of 0.4% of the outstanding shares of Comet Holding AG (prior year: 0.3%).

A detailed analysis of the shareholdings of the members of the Board of Directors and Executive Committee is presented in the notes to the separate financial statements of Comet Holding AG, in note 6.

06 Proposals to the 2023 Annual Shareholder Meeting for compensation of the Board of Directors and Executive Committee

At the 2023 Annual Shareholder Meeting, the Board of Directors will propose the resolutions for the compensation of the Board and the Executive Committee.

The detailed proposals and the supporting reasoning will be delivered to shareholders with the notice of the 2023 Annual Shareholder Meeting.

07 Compensation outlook for 2023

In 2022, the NCC conducted a holistic review of the compensation structure for the Executive Committee. On this basis, a revised compensation framework for the Executive Committee was prepared that will be effective from January 1, 2023. In its review, the NCC also considered the feedback from proxy advisors, shareholders, as well as independent experts on total reward management.

As part of the executive compensation review, the Board of Directors endorsed the design of a new long-term incentive plan (LTIP). This plan is constituted as a three-year forward-looking performance share unit (PSU) plan, which is based on an enlarged set of key performance indicators (sales growth, ROCE and ESG). Sales growth performance will be measured against the NASDAQ Global Semiconductor Index (GSOX). ROCE performance will be assessed against absolute benchmarks set by the Board of Directors in the three-year mid-term plan (MTP). ESG performance is measured against a scorecard that includes several targets in the "environmental" and "social" categories. The amount representing the maximum achievable number of PSUs at vesting (200%) will be submitted to prospective vote at the AGM.

The new LTIP is effective from January 1, 2023. To fund market-competitive PSU grants under this new long-term incentive plan, the composition of the incentive compensation for the members of the Executive Committee will shift in proportion from the annual short-term incentive plan (STIP) profit sharing mechanism to the new long-term incentive plan (LTIP). Since the new LTIP is structured as a three-year, forward-looking scheme with an initial payout in 2026, whereas the old LTIP was designed as a three-year backward-looking plan, current members of management will be grandfathered by deferring the proportional transition from the annual short-term incentive program to

the new LTIP until fiscal 2025. This transitional element will not apply to any new members of the Executive Committee.

More information on the new LTIP will be provided in the compensation report 2023.



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To the General Meeting of
Comet Holding Ltd., Flamatt

Berne, 28 February 2023

Report of the statutory auditor on the audit of the compensation report



Opinion

We have audited the compensation report of Comet Holding Ltd. (the Company) for the year ended 31 December 2022. The audit was limited to the information on remuneration, loans and advances pursuant to Art. 14-16 of the Ordinance against Excessive Remuneration in Listed Companies Limited by Shares (Verordnung gegen übermässige Vergütungen bei börsenkotierten Aktiengesellschaften, VegüV) in Note 04 on pages 167 to 171 of the compensation report.

In our opinion, the information on remuneration, loans and advances in the compensation report complies with Swiss law and Art. 14-16 VegüV.



Basis for opinion

We conducted our audit in accordance with Swiss law and Swiss Standards on Auditing (SA-CH). Our responsibilities under those provisions and standards are further described in the "Auditor's responsibilities for the audit of the compensation report" section of our report. We are independent of the Company in accordance with the provisions of Swiss law and the requirements of the Swiss audit profession, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.



Other information

The Board of Directors is responsible for the other information. The other information comprises the information included in the annual report, but does not include Note 04 in the compensation report, the consolidated financial statements, the stand-alone financial statements and our auditor's reports thereon.

Our opinion on the compensation report does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the compensation report, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the audited financial information in the compensation report or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.



Board of Directors' responsibilities for the compensation report

The Board of Directors is responsible for the preparation of a compensation report in accordance with the provisions of Swiss law and the Company's articles of incorporation, and for such internal control as the Board of Directors determines is necessary to enable the preparation of a compensation report that is free from material misstatement, whether due to fraud or error. The Board of Directors is also responsible for designing the remuneration system and defining individual remuneration packages.



Auditor's responsibilities for the audit of the compensation report

Our objectives are to obtain reasonable assurance about whether the information on remuneration, loans and advances pursuant to Art. 14-16 VegüV is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law and SA-CH will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this compensation report.

As part of an audit in accordance with Swiss law and SA-CH, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- ▶ Identify and assess the risks of material misstatement in the compensation report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- ▶ Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- ▶ Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made.

We communicate with the Board of Directors or its relevant committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Board of Directors or its relevant committee with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

Ernst & Young Ltd

MARTIN MATTES
Licensed audit expert
(Auditor in charge)

CRISTINA ZIMMERMANN
Licensed audit expert

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Statement of the CEO



**"Sustainability is
key to our future
success"**

Stephan Haferl
Chief Executive Officer

Comet does business in a responsible and sustainable manner: This is part of our ethics, our strategy and our value proposition for customers, investors, and employees, as we continue our transformation into a high-performing organization. Green power sourcing, resource conservation, solidarity with those in need, support for educational projects, respect for equality and diversity – these have been practiced at Comet for many years. But we want to do more. To fully live up to our responsibility as a corporate member of society, we are tackling these issues in a structured way and on a global scale. On the way to a future that is worth living for the next generations, we want to systematically improve.

In this Sustainability Report 2022, we talk about value creation, innovation, and the progress we have made in the areas of environmental and social matters and corporate and sustainability governance. In addition, we provide insight into our understanding of successful implementation and cultivation of sustainability in the company. In the long term, sustainability can only be successful if all employees are fully committed to it. Integrating sustainability into the business strategy and the corporate culture is key for our future success. This includes using future-proof, measurable sustainability criteria to create value that goes beyond shareholder returns, and systematically improving our environmental, social and governance performance. This is what we are working toward.

Purpose and business model

How we generate value and contribute to a world that is good to live in

As a trailblazing, leading tech company in radio frequency power and x-ray technology, we make a growing contribution to a safer, more efficient and sustainable world of manufacturing, communication and mobility.

Our high-tech products and services create value for countless people. Part of this value comes from our setting goals that go beyond shareholder returns. In everything we do, we aim to balance economic, environmental and social aspects in order to support a sustainable future alongside profitable long-term growth.

As a close and trusted partner to our customers, we expect to:

- Develop innovative and sustainable products that support our customers in realizing their strategies
- Leave the smallest possible environmental footprint along the entire value chain
- Provide career opportunities for employees in all our businesses and at all our sites
- Build relationships with suppliers and business partners based on fairness and transparency
- Take a leading role in sustainable development in our industry

Our ESG program serves as a compass for managing our environmental footprint, taking responsibility for our employees and satisfying the highest standards of compliance and governance. Our focus is on the long term.

Our business model

We strongly believe that in a world of finite resources, innovation improves all our lives.

The resources we draw on



Environmental

- Implement roadmap for efficiency gains and renewable energy use
- Enforce sustainability through supplier selection



Social

- Build customer relationships and co-creation capabilities
- Invest in people, culture and values
- Engage in communities



Governance

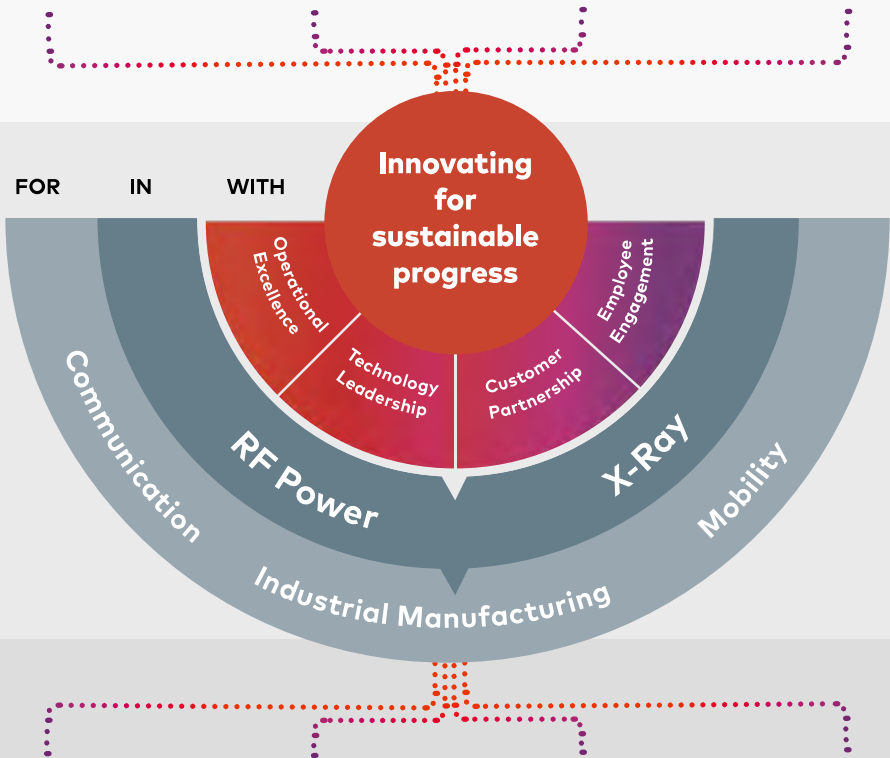
- Monitor and train adherence to Code of Conduct and ethical principles
- Embed regulatory standards in operations



Economic

- Maintain access to capital
- Achieve high brand recognition
- Make targeted investments

How we create value



The outcome we achieve

- Optimized efficiency and reduced greenhouse gas emissions
- Resilient and sustainable supply chain
- Increased customer loyalty and satisfaction
- Engaged, skilled and diversified workforce
- Strengthened license to operate
- High standards of behavior
- Full compliance with regulatory standards
- Sustainable financing of growth strategy
- Higher share of sales from semiconductor market
- Higher returns
- Capability to meet future customer needs

The impact of our actions



We provide stable and fair work for staff at all Comet locations worldwide



Through innovation we contribute to a sustainable infrastructure



We satisfy customer standards through binding supplier standards



We contribute to emission reduction and the efficient use of energy

Along our value chain, we rely on numerous resources to manufacture our products and provide our services. This is always done with the aim of using these resources as efficiently as possible.

Environmental: As a manufacturing company, we depend on a reliable supply of energy and raw materials. Wherever possible, we procure electricity from renewable sources such as hydropower, solar or wind energy. When procuring raw materials, we work with suppliers who can provide us with information about the origin of their products and who are interested in long-term business relationships. In our own production sites around the world, we are always working to keep our processes and facilities up to date in order to continuously improve production efficiency and thus reduce material and energy consumption.

Social: As a corporate citizen, we are aware of our responsibility in a world with ever more people and limited resources. Qualified employees with a high level of commitment are central to our past

and future success. That is why we invest in a corporate culture that is based on customer orientation, on empowering people and on trustful collaboration in all that we do.

Governance: The individual behavior of all of us – how we interact with colleagues, customers, suppliers, and all other stakeholders – determines our success as a company. The values and principles of the Code of Conduct developed in 2020 form the foundation of our corporate culture and the basis for all our actions and decisions.

Economic: We invest a high proportion of our profit in targeted long-term and sustainable growth. Access to sufficient equity and debt capital is ensured thanks to our company's balanced and conservative financial policy. Operating from this position of financial strength, we have consistently delivered value for our stakeholders over the past decades. Our success story is reflected in high awareness of the Comet brand among customers and competitors.

As a pioneering and leading technology company in radio frequency power and x-ray technology, we are making a growing contribution to a safer, more efficient, and more sustainable world in industrial production, communications, and mobility. We are the high-tech company of choice for all those who are actively shaping the future and an employer for all who want to get involved, make a difference, and explore new territory. We are committed to continuously developing our four core competencies of operational excellence, technology leadership, customer relationships and employee engagement. With our forward-looking technologies, we are a preferred partner to the most innovative companies in our markets. We stand for solutions and services that create high added value and sustainable progress. In pursuing our aims, we are guided by our long experience and keen spirit of discovery and innovation.

Led by experience. Driven by curiosity.

Environmental: The thoughtful use of energy and resources, the development of renewable energy sources, and a constant increase in efficiency throughout the entire value chain – with a focus on suppliers and production – together lead to a reduction in the emissions we cause. Systematic data collection will form the basis for developing a climate action roadmap, which is part of our objectives for fiscal year 2022.

Social: Through our continual efforts, we create value for our employees, our customers and our communities worldwide. Our employees benefit from progressive working conditions, a well-managed occupational health and safety program and a culture based on trust. This creates the foundation for superior performance and thus a high level of customer satisfaction and loyalty, in many cases extending over years. Finally and importantly, we fulfill our social responsibility by supporting community projects and privately funded initiatives.

Governance: Strict adherence to and full compliance with laws, policies and regulatory standards at the local, national and international level is an important asset on which our reputation is based. The ethical conduct of all individuals and partner organizations with whom we work also contributes to this. All internal and external stakeholders can rely on us to treat them fairly and ethically at all times.

Economic: Thanks to our strong positioning, solid financial footing, secure access to capital and the successful implementation of our focus strategy, we are growing our business. Anticipating customer needs and investing in advance are key in helping customers succeed with our leading-edge technologies. Backed by the Group's sustainable financing, we will continue to fulfill these activities in the long term and thus add value for all stakeholders.

The Comet Group contributes to the achievement of the Sustainable Development Goals developed by the United Nations as part of the 2030 Agenda. With our long-term and sustainable focus strategy, we aim to provide measurable added value as well as a clearly identifiable contribution to the improvement of the environment, society and the economy. Our focus is on those objectives over which we have the greatest influence in our business:

Decent work and economic growth: Our technologies are at the heart of digitalization. As a company with a long teaching tradition, we support dozens of apprentices, trainees and young professionals and help pave their road to success. By doing this, we actively contribute to economic growth, as these young talents become crucial for developing our innovative products that play a vital role in the digitalization of society.

Industry, innovation and infrastructure: As a critical supplier and partner to the semiconductor/electronics industry as well as to the automotive, aerospace

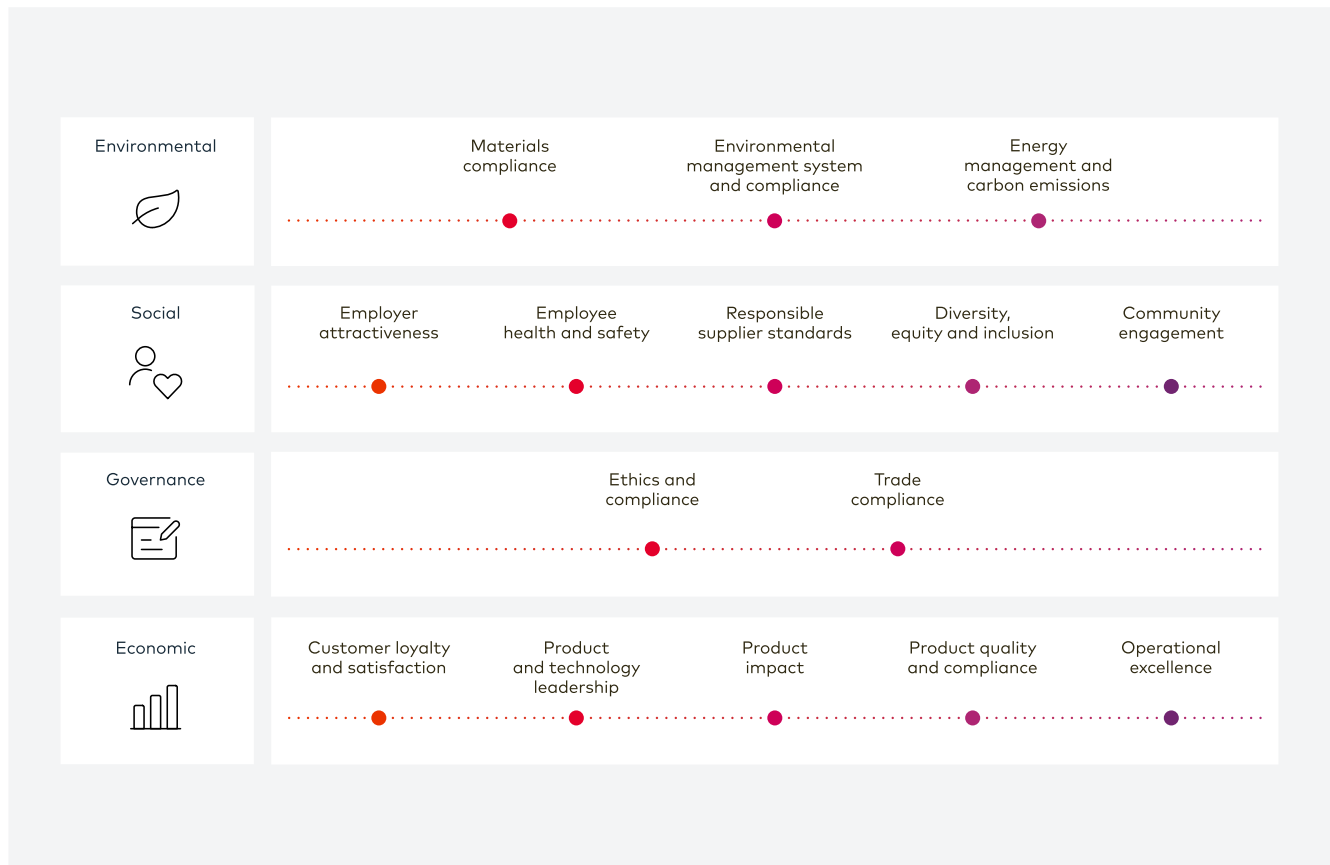
and security market, we are co-creating with our customers to develop the innovative solutions that provide sustainable progress and improve safety, security and quality of life for people everywhere.

Responsible consumption and production: We reject the ruthless pursuit of profit at the expense of the environment and society. We strive for a balance between economic, environmental, and social goals by training and sensitizing our employees worldwide to environmental and social aspects, and also involving customers, suppliers and other interest groups.

Climate action: We are committed to actively addressing climate change and contributing to the climate goals of the 2030 Agenda for Sustainable Development. To this end, we plan to develop and implement a climate action roadmap for Comet.

Material topics

Comet made significant progress in its sustainability strategy in 2022. Accordingly, this report on our non-financial performance has been expanded compared to the Sustainability Report first presented in 2021. The report, prepared in accordance with the GRI standards, provides information on our non-financial performance in the reporting year. The content of the GRI report is based on an assessment of those issues in our value chain that have the greatest impact on the environment, society, and the economy in the medium and long term. The materiality analysis is reviewed and approved by the Executive Committee and the Board of Directors every year. The next major analysis is planned for 2024.



The material topics shown above were developed in three steps during 2021. First, from among many topics, a shortlist of possible material issues was drawn up with the support of outside experts. This selection was made based on the Comet Group's corporate profile. In the second step, a materiality analysis in accordance with GRI standards was carried out in an expanded project group. As part of this analysis, the topics were assessed in terms of their relevance to stakeholders, their impact on sustainable development and – as a third dimension – their relevance for value generation.

This three-dimensional approach ensures that the results support not only corporate reporting but also strategy development. In the final step, the draft materiality matrix was discussed, adapted, and approved by the Executive Committee and the Board of Directors.

To take into consideration the perspective of the various stakeholders on a proxy basis, employees from all levels of the organization, from all divisions and from a variety of other functions were included in the process.

As a result of this process, the 15 topics shown above were identified as material. More information on the individual topics is provided in the relevant sections in the Report in Accordance with GRI Standards.

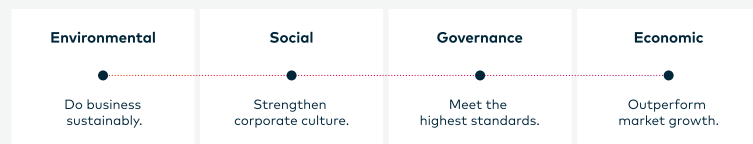
To improve performance on our material topics, we closely partner with Comet's stakeholders. Our key stakeholders are our employees, customers, suppliers, and shareholders. Some of these stakeholders have a direct impact on the improvement of material issues, while others are in turn impacted by our actions. We are therefore in regular communication with those stakeholders, in some cases daily. Typical interactions include quarterly "all hands" conference calls between the CEO and CFO and the employees, interactions on the Yammer social networking platform, regular meetings and calls with customers and suppliers, investor conferences, capital markets days with financial analysts and shareholders, and the annual shareholder meeting. In 2022, interactions with stakeholders resulted in management actions such as increasing inventories to maintain the ability to supply to customers, developing a flexible approach to working from home, increasing our production capacity in Malaysia, and launching a project for the installation of a photovoltaic system at the site in Switzerland.

Strategy: the Comet way

For 75 years, we have been developing and producing innovative high-tech components and systems based on x-ray and radio frequency technology. Consistent alignment with global trends and developments was and is the basis of our success.

For Comet, sustainability is one of the central pillars of the high-performance organization we strive for, alongside technology leadership. That's why our company has a tradition of engaging in causes and activities such as supporting the socially disadvantaged, pushing education for young people, promoting diversity, and generally reducing energy consumption and using sustainable energy sources. To further intensify these efforts, and to coordinate them even better within the company, we want to work on these fronts in a structured way at a global level. As a company that is aware of its social responsibility and is willing to shoulder it, we set long-term goals that we implement in small steps in the short term to become better every day.

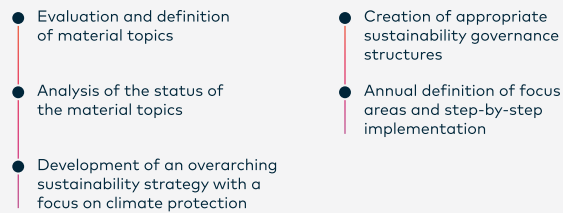
Value creation beyond shareholder returns



Therefore, in 2021, we launched our formal Group-wide sustainability initiative to consolidate our diverse activities in the divisions, to record where we stand, and to report on what we are doing. Now, in this second Sustainability Report, we provide insight into the progress we made in 2022. But that's not all. Ultimately, our aim is to use measurable sustainability criteria to create value beyond shareholder returns and to systematically improve our environmental, social, governance, and economic performance. This is what we are working toward. Our approach is to think big and look far ahead, but to progress gradually by completing one step of our journey at a time.

Sustainability has many facets, from climate protection to compliance with obligations and rules, to treating people well. To meet these extensive requirements, Comet has identified the following steps since setting up the sustainability program:

Improving our sustainability performance step by step

- 
- Evaluation and definition of material topics
 - Analysis of the status of the material topics
 - Development of an overarching sustainability strategy with a focus on climate protection
 - Creation of appropriate sustainability governance structures
 - Annual definition of focus areas and step-by-step implementation

We maintain a systematic yet pragmatic approach to sustainability. Alignment of the business strategy and the sustainability strategy with one another is one aspect. Sustainability is a priority for the Board of Directors and the Executive Committee. Equally important for success is the integration of sustainability consciousness into the corporate culture so as to include and involve every employee. Sustainability goals can only be achieved if people in the company embrace them as being consistent with Comet's core values and beliefs. To achieve this, we need to raise awareness in all employees that sustainability is pursued not just for the company's sake, but as a guarantor of a future worth living for all of us. Accordingly, wherever possible, we encourage our employees – and provide opportunities – to engage in generating ideas and implementing them in a bottom-up approach. We are not driven by regulations and rankings as much as by the firm conviction that Comet's long-term success is closely linked to sustainable business practices.

Governance and organization

Sustainability must be part of strategic management and corporate planning. This is because the company can take a holistic view only when sustainability is integrated in the ways the company is managed. Through forward-looking governance practices, Comet can positively influence environmental, social, and economic development. Accordingly, we strive to incorporate sustainability into each of our many business processes. To do so, the measurement and management of sustainability performance must be integrated into corporate strategy and governance. Thus, taking sustainability into account in the entire process of corporate management is a prerequisite for effective sustainability management.



Following approval by the Board of Directors in 2022, Comet established a dedicated organizational structure to develop, manage, monitor, and implement the sustainability strategy at Group level. Before the establishment of this organization, the individual sustainability topics were handled by the Group functions and the divisions.

The Board of Directors oversees and approves the sustainability strategy. The Board is also responsible for the review and approval of the annual sustainability reporting as part of the reporting process. It is informed quarterly about the status of strategy implementation and thus monitors the achievement of sustainability targets. The Board of Directors' committees deal with the topics that fall within their area of responsibility, such as eco-design for the Technology Committee or non-financial elements of executive compensation for the Nomination & Compensation Committee (NCC). The Board of Directors has delegated the implementation of the sustainability strategy to the Executive Committee.

The Executive Committee is responsible for implementing the sustainability strategy and for preparing the annual sustainability reporting. The Chief Executive Officer (CEO) acts as sponsor of the sustainability program and is therefore accountable for sustainability at Comet. In executing the strategy, the Executive Committee is supported by a Sustainability Board. The chair of the Sustainability Board updates the Executive Committee in regular quarterly meetings on the progress in the strategy's implementation.

The Sustainability Board also meets quarterly to discuss ongoing sustainability initiatives, launch new initiatives, and prepare sustainability goals for approval by the Executive Committee. As members of this board, high-level representatives of the company meet to drive and execute the sustainability strategy or develop actions and measures that address key issues. The Sustainability Board ensures the cohesion of the Group's sustainability efforts.

The detailed elaboration and operational implementation of the sustainability initiatives is carried out in various working groups that map the main issues. These are made up of representatives of the business areas and corporate functions who are responsible for the topic in their area of activity.

Climate roadmap

With the Paris Agreement, 196 countries agreed to limit the global temperature increase to 1.5 degrees as far as possible. We are committed to protecting our environment for future generations and thus doing our part to achieve this goal. We have therefore launched numerous initiatives to systematically tackle the process of reducing greenhouse gas emissions.

Our journey to net zero in the long term

Although Comet is not an energy-intensive company, we have embarked on a journey to make our contribution to a livable future on our planet Earth. For this purpose, we have developed a climate roadmap, which essentially comprises the following four steps:



1. General analysis and greenhouse gas (GHG) accounting

- Identification of key emission sources along the value chain
- Scope 1 and 2 emission inventory and Scope 3 emission assessment (relevance check, screening, and inventory)

2. Verification of GHG emission reduction scenarios

- Simulation of near- and long-term science-based reduction pathways for Scope 1, 2, and 3 emissions while integrating our business growth forecast
- Site- and division-specific implementation scenarios: planning of measures and related costs, and feasibility check

3. Target-setting and implementation

- Target-setting for Scope 1, 2, and 3 emissions (Group, divisions, sites)
- Development and execution of the action plan, incl. eco-design approaches (at product level), renewable energy purchasing (at production sites) and energy efficiency measures

4. Science-Based Targets initiative (SBTi) commitment

- Formal commitment to the SBTi
- Validation of targets by the SBTi
- Periodic reporting on progress through our annual report and our disclosure in accordance with CDP and the Taskforce for Climate-related Financial Disclosures (TCFD)

In line with our step-by-step approach, we have developed the climate roadmap in a top-down fashion and also already implemented many initiatives bottom-up, as shown by the reporting on our Scope 1 and 2 CO₂ emissions, by the first targets for Scope 2 emissions, and by various measures taken to reduce our carbon footprint. We are aware of the urgency of the issue of climate protection. But we must also recognize that the medium-term Science Based Targets (SBTi) to which we plan to commit, and getting to net zero in the long term, will only be achieved by continuously solving multiple challenges over time and by closely collaborating with our clients, partners, and suppliers.

Focus on analysis and the first implementation measures

To tackle the climate challenge and reduce our carbon emission footprint, the following actions will be the main drivers in our action plan:

Six main drivers to reduce our carbon footprint

- Switch facilities to the use of electricity from renewable resources
- Identify and execute energy efficiency measures in our operations and value chain
- Incorporate eco-design thinking in product development
- Set measurable targets, monitor achievements, and report on our progress
- Develop processes and frameworks to enhance data quality and accurately measure progress
- Encourage suppliers to participate in this effort and drive sustainability in their operations

In our own operations, we have implemented many major initiatives in the last several years. As an example, we have installed a photovoltaic system in Hamburg, Germany. Also, we operate our plants in Flamatt, Switzerland, Hamburg, Germany, and Taastrup, Denmark, with 100% renewable electricity. Following our approach of taking small steps that are implemented immediately, we have realized many smaller initiatives that contribute to reducing our emissions. ([Link](#))

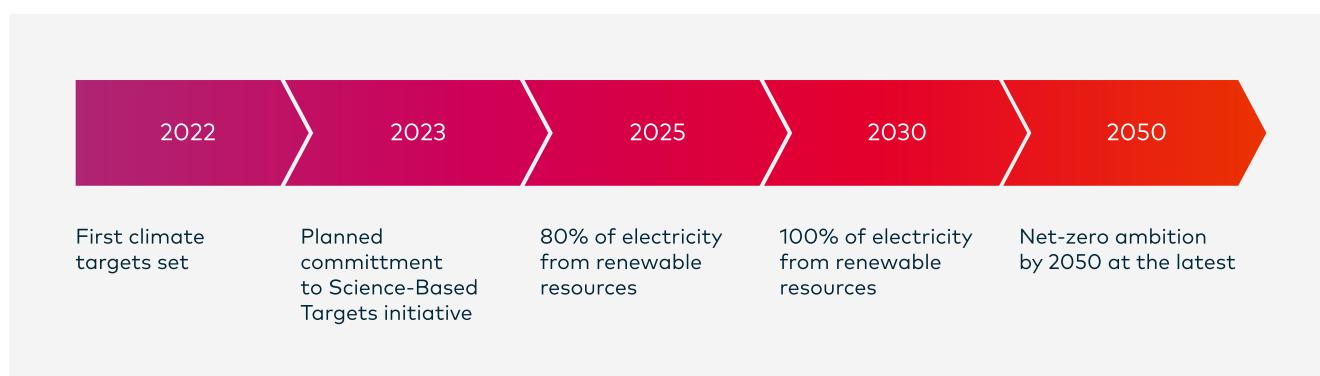
In terms of Scope 3 emissions, we took the first steps in 2022, by identifying the categories with the highest impact on Comet's greenhouse gas emissions. This process led to the conclusion that five of the 15 Scope 3 emission categories are responsible for the majority of the GHG emissions:

- Category 1 – Purchased goods and services
- Category 2 – Capital goods
- Category 4 – Upstream transportation and distribution
- Category 9 – Downstream transportation and distribution
- Category 11 – Use of sold products

Based on this analysis, we performed an initial Scope 3 screening with a focus on the categories 1 and 2, for which we estimated the approximate carbon emissions using a spend-based economic input-output method. Not surprisingly, this screening revealed that Scope 3 emissions exceed the sum of Scope 1 and 2 emissions by a factor of six to seven. Further work to refine calculation of Scope 3 carbon emissions is planned for 2023 to achieve better transparency and data robustness. On that improved basis, we plan to develop Scope 3 emission-related initiatives.

Targets and priorities for 2023

On our journey to achieving net zero in the long term, we set our first climate-related targets in 2022. Over time, based on our array of action steps, we will develop further targets that will help us monitor the effectiveness of our efforts and measures to reach net-zero by 2050 at the latest.



For 2023 we have defined four priorities to progress in our CO₂ emission reduction efforts and improve our processes to further enhance transparency in terms of the quality of our sustainability reporting:

1. Take the next steps in our climate roadmap

- Develop targets under the Science Based Targets initiative (SBTi) targets
- Roll out an eco-design initiative: action plan, training, life-cycle assessments, and product development
- Refine Scope 1 and 2 data and perform Scope 3 inventory

2. Establish a vigorous and effective ESG organization

3. Improve data collection processes, data quality and data validation

4. Initiate the first steps toward compliance with the TCFD framework: governance, strategy, risk management as well as metrics and targets.

Following this plan, we will incrementally improve our GHG footprint and contribute to the world's pursuit of the ambitious targets set in the Paris Agreement in 2015.

Achievements in 2022

In 2022, a large number of sustainability initiatives were implemented throughout the Group. Many of our employees have contributed to making Comet more sustainable. Whether through ideas, the implementation of their own initiatives, or in projects to which they have contributed their enthusiasm for the topic, their skills and their knowledge. For this, Comet's management would like to express its gratitude to our colleagues. We want to encourage everyone to continue to play an active role in shaping our future.

Environmental

To protect the environment and the interests of society, the Comet Group must focus on sustainability in all its activities and implement and comply with appropriate environmental standards.

The thoughtful use of energy and resources, the development of renewable energy sources, and a constant increase in efficiency throughout the entire value chain – with a focus on suppliers and production – together lead to a reduction in our emissions. Systematic data collection will form the basis for refining and detailing the climate action roadmap, which is part of our objectives for fiscal year 2023.

As a manufacturing company, we depend on a reliable supply of energy and raw materials. Wherever possible, we procure electricity from renewable sources such as hydropower, solar or wind energy. When purchasing raw materials, we work with suppliers who can provide us with information about the origin of their products and who are interested in long-term business relationships. At our own production sites around the world, we are always working to keep our processes and facilities up to date in order to continuously improve production efficiency and thus reduce material and energy consumption.

Environmental

Achievements in 2022



Renewable energy, energy efficiency and lower carbon emissions

- The optimization of the heat pump in Flamatt, Switzerland, reduced heating oil consumption by 10,000 liters; various measures to replace or optimize outdoor and indoor lighting lowered electricity consumption by more than 4,000 kWh.
- As the largest consumer of electricity within Comet Technologies USA, the San Jose site has switched to 100% renewable electricity. Work is being done to convert other locations to using only renewable power.
- Various energy-saving measures at Comet in China resulted in power savings of 10%, e.g., by training employees to save electricity, switching off the air conditioning system and installing high-speed roll-up doors in the warehouse.
- Energy conservation initiatives in Denmark led to an overall reduction of 6% in electricity consumption at the site.
- Bike-to-work initiative: 11 teams with a total of 41 participants biked 19,534 km in June/July 2022, saving 2,813 kg of CO₂ emissions in Switzerland.

Material efficiency and waste reduction

Multiple actions were taken to reduce environmental impacts immediately:

- Monitoring of substances on 270 safety data sheets for Substances of Very High Concern (SVHC) resulted in the elimination or substitution of 10 of the 13 substances identified at IXM.
- Nearly 3 metric tons of solid waste were treated by a contracted local certified provider in Shanghai, China.
- Comet Technologies USA has enhanced its waste program to reduce, recycle, and reuse. In addition, the recycling program has expanded to include paper, e-waste, chemicals, and metal, with dedicated collection areas within the new building.
- Recycling of cardboard boxes and scrap screws led to a tripling of recycled materials in Malaysia.
- In Denmark, waste separation for all employees was introduced in their offices.

Carbon reduction measures in San Jose



541 E Trimble Road, San Jose

Another initiative at Comet Technologies USA in San Jose is that of carbon reduction measures integrated into the design of the new building, where the currently four Comet sites in the city will be consolidated under one roof. This includes:

1. The design of a heating, ventilation, and air conditioning (HVAC) system with multiple zones allowing for the large refrigeration unit to be turned off when cooling consumption levels are low. Electricity savings are estimated at approximately 4,000 MWh over the term of the ten-year lease.
2. A cardboard/paper compactor that will minimize the bulk and maximize the density of waste cardboard, leading to fewer trips by disposal trucks. After pickup, the waste cardboard will be recycled.
3. The lighting package was selected for its low energy consumption.

It is also planned to promote the use of electric vehicles through the provision of EV charging stations at the new building, which utilize renewable energy, and to install gas scrubbers to capture more than 99.99% of GHG and other contaminants released in R&D operations.

Environmental achievements in 2022 (continued)



Colleagues in Japan working on SDGs

Raising awareness

- A three-hour Climate Fresk Workshop was conducted for some employees in Switzerland, deepening the knowledge about the roots and consequences of climate change.
- In Malaysia, employees were trained in the conservation of natural resources and the prevention of pollution.
- Comet Technologies Japan conducted training for employees on the Sustainable Development Goals (SDG) by a certified instructor to deepen the understanding of their importance.

Ratings

- Comet received a C rating for the first-time submission of its CDP Climate Change disclosure, on par with the Electrical & Electronic Equipment industry average of C.
- Comet ranks in the top one-third of the MSCI ACWI Index constituents in the Electronic Equipment, Instruments & Components industry, after being upgraded by MSCI from BB to A.

Various activities

- Comet has applied to become part of an initiative in Switzerland related to setting up a national reserve power plant network consisting of emergency power generators. ([Link](#))
- An initiative launched by employees in Switzerland collected 75 ideas on how to tackle climate change at the company. Some of these ideas are already being implemented.



Social

Our employees are connected by a passion for technology, a strong corporate culture, and a commitment to our shared values. This is the basis for our success.

As a corporate citizen, we are aware of our responsibility in a world with ever more people and limited resources. Qualified employees with a high level of commitment are central to our past and future success. That is why we invest in a corporate culture that is based on customer orientation, on empowering people and on trustful collaboration in all that we do.

Through our continual efforts, we create value for our employees, our customers, and our communities worldwide. Our employees benefit from progressive working conditions, a well-managed occupational health and safety program and a culture based on trust. This creates the foundation for superior performance and thus a high level of customer satisfaction and loyalty, in many cases extending over years. Finally, and importantly, we honor our social responsibility by supporting community projects and privately funded initiatives.

Active DEI Board at Comet Technologies USA

The Diversity, Equity & Inclusion Board of Comet Technologies USA was again highly active in 2022. As a frontrunner in the Group, the DEI Board launched several initiatives with the goal of driving public awareness of Comet as a diverse, equitable, and inclusive employer recognized by top talent, as a go-to place for exciting career opportunities and growth potential:

- The DEI initiative theme for 2022 was the assimilation and retention of top talent. The DEI Board developed, trained, and helped implement the launch of the Buddy Program, which is designed to educate newly hired employees on the company and culture.
- We continued the contract with Progressive Women Leadership, a third-party company focusing on empowering our female colleagues.
- We initiated an HR-themed lunch-and-learn series to aid our employees in taking control and becoming directors of their own growth within the organization.

Social

Achievements in 2022



Plogging event in Malaysia

Community engagement

- Comet gave CHF 100,000 to UNICEF in emergency aid for families in need in Ukraine.
- The 2022 year-end campaign Connected Hearts generated CHF 8,912 for UNICEF Giga, the initiative to connect every school to the Internet and every young person to information, opportunity, and choice.
- Schools on Wheels for children in Bihar, India, was supported by participating in the 2020/2021 UNICEF year-end campaigns ([Link](#))
- Comet in Malaysia was also very active. A considerable number of employees donated blood to Penang's blood bank, and the site held a plogging event (a combination of jogging and picking up litter) with the participation of 21 employees, including six visiting colleagues from the USA.
- Comet Yxlon employees auctioned off old company PCs, collecting EUR 3,000 for digitalization projects at the Erich-Kästner-School in Hamburg.
- In Japan, Comet donated sanitary products to women in need in Yokohama City, teaming up with the Yokohama Gender Equality Promotion Association and Yokohama City Council of Social Welfare.
- Comet Technologies USA held its first multi-divisional fundraiser, collecting nearly USD 3,000 to feed needy people in Northern California served by the charity Second Harvest.

Comet leader invited to speak about diversity and inclusion

At SEMICON Europa, Marco Fasel, Team Leader, Industrialization, at Comet, together with three other panelists spoke about leveraging generational differences in the shifting workplace. The highlights of his experience are summarized at <https://comet.tech/en/news/intergenerational-teamwork>

Achievements in 2022



Employer attractiveness

- Our employer brand was sharpened by rebranding Yxlon to Comet Yxlon.
- In the USA the relationship with University of Illinois Urbana-Champaign was continued, sponsoring, among other activities, a masters degree program for a physics major.
- Comet Technologies USA participated in the SEMICON West trade show, sponsoring a workforce development initiative, which identified 34 candidates for internships and/or full-time positions.
- An Up & Beyond Award has been launched to encourage employees' special recognition for their commitment in terms of "a great place to work", corporate culture and teamwork. The recipients are proposed by Comet employees based on an exceptional contribution to a specific project or task. A total of 175 employees were awarded in 2022.
- E-based awareness trainings were launched, starting with the topic "Internet Security and You".
- The Group expanded its on-demand learning offering in collaboration with getAbstract.
- In China, PCT hosted a Management Style and Leadership Art workshop with 12 leaders from PCT and Central Services.
- Comet welcomed 17 children to its Future Day at the Flamatt site in Switzerland.

Comet encourages remote work

As a modern and forward-looking company, Comet launched a first test case at its headquarters in Switzerland to promote remote working for those who are eligible. A mix of time in the office and working from home allows our employees to use their working hours as efficiently and effectively as possible, to be successful in their work, and at the same time to maintain a good work-life balance.

Social achievements in 2022 (continued)



Front desk area in the new building in San Jose

Health and safety

- In June, Comet reached a milestone in Flamatt: a total of 1,000 safety-related measures implemented over 15 years to prevent occupational accidents and health-related absences.
- In Malaysia, a road safety awareness program was conducted in collaboration with the relevant government agency to increase motorcycle riders' safety awareness while commuting to work.
- A North America-wide EHS assessment of all locations was performed in the USA. The conclusions of the assessment resulted in the following improvements:
 - Lockout/tagout (LOTO) procedures were updated and improved
 - Inventories of compressed gas and chemicals were updated, resulting in the identification of obsolete chemicals
 - An improved injury and illness prevention program was developed
 - The safety committee was re-established post-COVID
- Industrial hygiene surveys were conducted at all locations in the USA, including monitoring of noise levels, air quality, and surface contamination analysis.
- Employee health and safety has been a leading focus in the design of Comet's new building in Silicon Valley. Important additional features are incorporated to further protect employees:
 - Security alarm system installed throughout the building
 - Badge access at all entry points, linked to the alarm system and building management system
 - Security cameras inside and outside the building with enhanced logic that monitors vehicle traffic, timestamps badge access points and logs security events
 - Security guards are employed to patrol the buildings on evenings, nights, and weekends.

Governance

In everything we do, we are committed to ethical and legally compliant behavior. Every single point of our [Code of Conduct](#) is non-negotiable.

The individual behavior of all of us – how we interact with colleagues, customers, suppliers, and all other stakeholders – determines our success as a company. The values and principles of the [Code of Conduct](#) developed in 2020 form the foundation of our corporate culture and the basis for all our actions and decisions.

Strict and full compliance with laws, policies and regulatory standards at the local, national, and international level is not just the right thing to do, but an important asset on which our reputation is based. The ethical conduct of all individuals and partner organizations with whom we work also contributes to this. All internal and external stakeholders can rely on us to treat them fairly and ethically at all times.



Integrity hotline: Practicing and adhering to proper business ethics is an integral part of our relationships with each other, our customers, our suppliers, our investors and even our competitors. Ethical behavior is a crucial foundation for trustful collaboration and for our company's success. We commit all Comet employees to abide by our [Code of Conduct](#), including ourselves. To ensure that every employee understands what our [Code of Conduct](#) contains, we introduced mandatory compliance training some time ago, which each Comet employee must complete periodically.

For misconduct to come to light and action to be taken, Comet relies on employees to speak up. In the event that laws, regulations or policies are being violated at work, the first step for the reporting employee ideally is a confidential conversation with the line manager or our Global Head of Human Resources or Global Head of Compliance. However, there are situations where this is difficult. For such cases, Comet introduced an integrity hotline. The Integrity Line allows employees worldwide to report misconduct while remaining anonymous. To ensure anonymity, the reporting goes through an external partner that provides such systems for many companies.

Governance



Achievements in 2022

- Comet Holding AG implemented updated capital market-related policies, introduced a data protection model for the Group, and issued an Intellectual Property Handbook.
- In the USA, Comet further updated its software and programs to ensure business is not being conducted with sanctioned countries or with companies or people that are on the Denied Parties List.

Conflict minerals statement

On January 1, 2022, the Swiss government enacted the provisions under corporation law on reporting obligations of companies on non-financial matters (section 964a et seq. Code of Obligations) as well as due diligence and reporting obligations regarding conflict minerals and child labor (section 964j et seq. CO). Reporting under these provisions will be required for the first time for fiscal year 2023. Besides the Swiss laws, legislation such as the US Dodd-Frank Wall Street Reform and Consumer Protection Act and the EU Conflict Minerals Regulation mandate that companies demonstrate the responsible sourcing of their minerals.

As Comet is not listed on a US stock exchange, it is not required to report under the Dodd-Frank Act (Sec. 1502). However, to provide full transparency on our conflict minerals exposure, and in accordance with our explicit commitment to comply with all laws and regulations, we place great emphasis on keeping our supply chain free of minerals that fall under all laws and regulations regarding sourcing from conflict zones. A description of our due diligence efforts regarding conflict minerals is provided in the Report in Accordance with GRI Standards.

Based on all currently available information, Comet does not source conflict minerals that originate in the Democratic Republic of the Congo (DRC) or its adjoining countries.

Human rights statement

In general, we do not operate in business sectors or regions that pose significant risks in terms of human rights, including risks related to child labor or to the respect for the fundamental human rights of employees. Concerning child labor, our suppliers certify that they do not hire workers who are less than 15 years of age (in accordance with ILO Convention 138) and that they comply with the domestic standards for the protection of children. Regarding forced or compulsory labor, our suppliers certify that they respect the fundamental human rights of workers, such as, among other aspects, by refusing to hire or allow someone to work against their will.

Economic

To successfully place our products and services on the market and compete effectively, it is necessary to implement efficient procedures and maintain high quality standards.

We invest a high proportion of our profits in systematic long-term, sustainable growth. Access to sufficient equity and debt capital is ensured by our company's balanced and conservative financial policy. Operating from this position of financial strength, we have consistently delivered value for our stakeholders over the past decades. Our success story is reflected in high awareness of the Comet brand among customers and competitors.

Thanks to our strong positioning, solid financial footing, secure access to capital and the successful implementation of our focus strategy, we are growing our business. Anticipating customer needs and investing in advance are key in helping customers succeed with our leading-edge technologies. Backed by the Group's dependable financing, we will continue these activities in the long term and thus add value for all stakeholders.

In 2022, Comet introduced several new products to the market.

Product innovation in 2022



**Link to product
stories**

Comet wins Innovation Award



Award Ceremony on November 9

Comet wins the Innovation Award 2022/2023 of the Canton of Fribourg with its innovative MesoFocus technology

With its newly developed MesoFocus x-ray technology, Comet takes first place in the prestigious Fribourg Innovation Award, winning in the Established Companies category.

The world is more mobile and connected than ever before – thanks in part to increasingly powerful and durable batteries. To ensure that batteries are safe, they need to be tested. That's where Comet's MesoFocus comes in. Through the development of the MesoFocus x-ray tube, Comet enables battery manufacturers to visualize even the finest details in batteries when inspecting them on production lines, and to detect potential defects early on. Better yet, this inspection can now be performed with unprecedented accuracy, speed and practicality.

Operational excellence

Optimized delivery of copper strips to the shop floor in Flamatt

By optimizing the copper strip product carriers, the Comet supply chain team in Flamatt was able to improve the throughput time from goods receipt to the end user in production from four hours to only 45 minutes. Unnecessary handling has been eliminated, thus reducing the physical strain on employees. This measure cut out the repackaging process step for 33 metric tons of copper annually. In addition, the use of wood was completely eliminated from the process.

Report in Accordance with GRI Standards

In this Report in Accordance with GRI Standards, the management approaches and selected GRI disclosures relating to the material topics as presented in the Sustainability Report are explained in more detail.

Environmental

Materials Compliance

Materials compliance is compliance with any laws, regulations and specifications that restrict or even prohibit the use of various substances and/or materials in products, including, for instance, environment-related legislation, international law, religiously motivated specifications, and specifications by companies. For Comet as a manufacturer of industrial products, an indispensable requirement for doing business worldwide is compliance with regulations relevant to the environment and to market access – such as Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), Restriction of Hazardous Substances (RoHS), and the Toxic Substances Control Act (TSCA) – as well as with legislation driven by international law and ethics, including conflict minerals legislation, the Dodd-Frank Act and Regulation (EU) 2017/821. In 2022, for example, in connection with REACH and its Substances of Very High Concern (SVHC), we classified all our safety data sheets in SAP. This resulted in the elimination or replacement of ten of the identified 13 substances on the SVHC list from our products.

We are committed to providing our customers with the highest-quality supply chain that meets all established product performance standards and expectations. Our purchasing department maintains these high standards by continuously evaluating the performance of our established suppliers.

Comet's [Supplier Code of Conduct](#) (Supplier CoC) is based on the Code of Conduct of the Responsible Business Alliance (RBA) and sets out the basic requirements for our suppliers and external service providers regarding their responsibility toward their stakeholders and the environment. We reserve the right to amend the requirements of our [Supplier CoC](#) to reflect changes in our compliance policies.

In addition to supplier self-declaration in the form of the signed [Supplier CoC](#), we work with third-party supply chain specialist Assent Compliance Inc. The Assent platform collects the data required to comply with REACH, RoHS, conflict minerals rules and the TSCA. This solution provides assurance that our suppliers are compliant with all relevant laws and regulations. Suppliers who do not submit data to Assent are contacted directly by us and requested to provide the necessary documentation. When appropriate, we work together with our suppliers to identify actions to achieve improvement. However, we reserve the right to terminate the business relationship with the supplier (subject to applicable laws) if the supplier fails to comply with the code, and we reserve the right to take legal action against the supplier.

As part of its due diligence measures in the reporting year, Comet identified minor deviations from best practices with regard to conflict minerals regulations at a small number of suppliers. This was brought to the attention of the suppliers and the situation continues to be closely monitored.

The responsibilities for the processes are mapped in the Comet Group management system. Essentially, the specifications for materials compliance are made at the Group level by the Vice President of Global Operational Excellence (VP GOE), who reports directly to the CEO. The VP GOE defines the compliance regulations together with the Group legal experts. The responsibility for implementation in the regions rests with the divisions, and accountability for it lies with the respective country general managers. Materials compliance activities are coordinated worldwide within the Quality & Excellence Board.

Environmental Management System and Compliance

The principle of sustainability is an integral part of Comet's corporate culture. We strive to offer our customers high-quality products and services while avoiding environmental risks and producing in ways that conserve resources. The principles of this approach are set out in the Comet Group's Quality, Environmental and Safety Policy, with supplementary information in the [Code of Conduct](#).

While all our production and research and development sites are certified to ISO 9001:2015, only Comet Yxlon (the IXS division) in Hamburg has designed and implemented an environmental management system in accordance with ISO 14001:2015. Smaller entities that perform only sales and marketing activities are not certified. To ensure compliance with environmental regulations, however, internal audits, customer and certification audits, benchmarking and best-practice applications are conducted at regular intervals at all production sites.

Comet plans to achieve one single Group-wide ISO 9001 certification by the end of 2023. The Group-wide certification of ISO 14001 will then be added during 2024. As most of Comet's major sites will be due for recertification in 2023, that year will represent a natural opportunity to unify the quality management systems and achieve single certification.

The Vice President of Global Operational Excellence (VP GOE) is responsible for the performance of the Comet quality management system, including the process framework and architecture. The VP GOE drives the definition, implementation, and improvement of Group-wide processes in close cooperation with the divisions. Among other responsibilities, the VP GOE sets minimum standards for non-financial KPIs

and ensures certification and compliance with ISO standards. In this function, support comes from various boards and councils, such as the Operations Council and the Quality & Excellence Board, which includes the Q&E heads of the divisions. Accountability for environmental compliance rests with the respective country general manager, while responsibility for it lies with the division country manager. In the year under review, the Comet Group did not face any ongoing or completed legal proceedings for non-compliance with environmental laws or regulations. Likewise, no fines for environmental infractions were imposed on the company.

Energy Management and Carbon Emissions

All steps of the Comet value chain involve energy consumption and associated greenhouse gas emissions. Electricity consumption dominates in the production and use phases of the products. Energy consumption and emissions in the upstream chain are also significant, especially in the production and transport of raw materials and semi-finished products.

In the reporting year 2022, Comet refined its environmental data collection process. This allows us to report consolidated Group-wide environmental KPIs for our production (Scope 1 and 2) for the year under review.

Comet has developed a climate roadmap to meet short-, medium- and long-term CO₂ emission reduction targets and to progress toward the net-zero emission ambition by 2050. Measures to reduce emissions in line with these targets were implemented. Further steps were taken to increase the energy efficiency of our Group-wide production and to enhance the share of green electricity in our energy mix. In a dedicated working group, we will start in 2023 to identify a set of measures to further refine the Group's approach to energy management and emission reduction.

In 2022, Comet's Board of Directors approved the formation of a sustainability organization. This is set out in the [Sustainability Policy](#) approved at the end of December and is described in detail in the Sustainability Report in the section "Governance and organization".

Environmental metrics ¹		2022
Energy consumption total	MWh	20,163
Electricity total	MWh	15,571
Of which renewable	MWh	11,011
Heating total	MWh	3,587
Heating oil	MWh	147
Natural gas	MWh	3,023
District heating	MWh	418
Fuels total	MWh	1,001
Diesel	MWh	746
Petrol	MWh	253
LPG	MWh	2
Greenhouse gas emissions total²	tCO₂e	4,166
Greenhouse gas emissions total		
Scope 1 total	tCO₂e	918
Heating	tCO ₂ e	652
Fuels	tCO ₂ e	266
Scope 2 total	tCO₂e	3,248
Electricity ³	tCO ₂ e	3,177
District heating	tCO ₂ e	71
Resource efficiency metrics		2022
Waste total⁴	t	2,682
Water consumption⁵	m³	32,874

¹ Scope covers all of Comet's companies and locations.

² Calculations in accordance with the WRI/WBCSD Greenhouse Gas Protocol guidelines. Scope 1: GHG emissions from own sources, e.g., fuels. Scope 2: GHG emissions stemming from the production of electricity and district heating. Sources for emission factors: Defra & IEA.

³ With the exception of Flamatt and Hamburg, greenhouse gas emissions associated with the production of electricity were accounted for in accordance with the "location-based approach" under the Greenhouse Gas Protocol Scope 2 standard. No emissions stem from electricity consumption in Flamatt and Hamburg, as the sites run entirely on renewable electricity. Considering only the location-based approach, electricity consumption across all sites would be responsible for 4,354 tCO₂e emissions in 2022.

⁴ Does not include Comet Electronics Co. Ltd., Comet Solutions Taiwan Ltd., Object Research Systems (ORS) Inc., and Yxlon X-Ray Equipment Trading Co. Ltd.

⁵ Does not include Object Research Systems (ORS) Inc.

Social

Employer Attractiveness

People are our most important asset. In view of the shortage of skilled personnel in industry, particularly of research and development experts and engineers, we are expanding activities that support our visibility and attractiveness as an employer. Networking, attracting and retaining talented young people early on, during their studies, is therefore high on the agenda, along with identifying and developing diverse talents within the company and ensuring an attractive, flexible and inclusive work environment. We thus continued the relationship with the University of Illinois Urbana-Champaign initiated in 2021 to support students, invested in a workshop facility for training apprentices at the Swiss site in Flamatt and supported a research project at the Swiss Federal Institute of Technology (ETH) in Zurich. In addition, our US entity sponsored a workforce development initiative that resulted in identifying 34 candidates for internships and/or full-time positions. Since 2021, Comet also has a new program for the continuous and systematic identification and development of in-house talents. In Switzerland in summer 2021, Comet received the Fair-ON-Pay+ certificate for gender pay equity. The certificate is valid for four years. A brief maintenance test is carried out in year three to check whether the standard criteria are still met.

In terms of recognizing our employees' engagement, we successfully rolled out our global Up & Beyond Award in 2022. The award recognizes employees who act as role models for Comet in how they collaborate, demonstrate our values, and contribute above and beyond the expectations for their daily jobs. In 2022, we gave out 175 Up & Beyond Awards to recipients in every Comet location and in every area of business. Some examples of specific reasons for being selected for the award are cross-functional and cross-divisional teamwork, betterment of the workplace, and overcoming unstable supply chains.

The retention and engagement of our employees and their loyalty to the company play just as important a role as hiring talented new people. We therefore periodically conduct market benchmarking and perform employee pulse surveys to monitor the level of satisfaction and engagement of our employees, and, when needed, initiate measures to strengthen it. In order to recruit new talent, we conduct needs analyses and regularly review policies and regulations, adjusting them as appropriate.

We also value the employee retirement experience. Our Human Resources team focuses on successful transitions, whether the employee is retiring or leaving the company voluntarily or involuntarily.

In 2019 and again in 2021, we conducted a worldwide engagement survey. This "pulse check" confirmed the good progress made toward becoming a higher-performing organization. The message from it was that we should continue on our chosen path and improve organizational development and, where necessary, improve organizational development and excellence in appropriate ways. For example, it was recommended to:

1. Continue to leverage go-to-market initiatives, such as a common Group framework for sales processes and the introduction of global sales training with one integrated, state-of-the-art training program
2. Focus on integrated talent management, improving talent acquisition in a very competitive market for top talents, developing and retaining our top talents and providing diverse career opportunities within the Group

To address the latter thrusts, we implemented initiatives to develop talent, train apprentices in our own apprentice workshops, and offer progressive social benefits as an important part of our culture. In 2022, we focused on understanding what makes Comet an attractive employer and what it is that we need to do in order to attract and retain talent in future. Based on internal surveys and market research, we determined that the best way for the Comet Group to differentiate itself in the employment market is through the company's distinctive quality of *curiosity*. To attract and engage the best talent, it is our mindset of curiosity that will set us apart from competitors for talent. Curiosity to get to the bottom of things, or to break new ground. Curiosity as the key to innovation and thoughtful collaboration, to empowering employees to explore, and to better understanding our customers. In a word, curiosity enables the high performance we strive for.

With respect to training, we provide our employees at all levels with regular vocational training in subjects such as quality and excellence, health and safety, product and sales, management, and leadership. In 2022 all managers globally were trained on our new performance and planning approach, whereby employees are empowered to take responsibility for their goals and development needs, and leaders are encouraged to set team goals, to give regular feedback and coach their team members to achieve higher performance and learn from failure. We also successfully rolled out eLoomi, a global e-learning tool, which helps to raise awareness and train employees on global policies such as the [Code of Conduct](#), Trade Compliance, Travel and Group Purchasing, as well as global HR processes like goal-setting and salary reviews. Employees also have access to content that is directly relevant to them – for example, how to work safely from home. We continued to implement development plans for employees who had been identified as key players in our talent review process. These development plans include mentoring (across regions and businesses), short-term cross-functional projects, international assignments, and coaching. In Flamatt we conducted training for all leaders on how to lead in a hybrid world; depending on the feedback, we plan to roll this training out globally.

Workforce composition	2022	
	Male	Female
Workforce by employment contract	1,348	415
Permanent	1,184	374
Temporary	164	41
Workforce by employment type ¹	1,184	374
Full-time	1,078	304
Part-time	106	70

¹ Permanent staff only.

Workforce by region	2022		
	Europe	Asia	North America
Total	1,061	324	378
Permanent	897	292	369
Temporary	164	32	9
Workforce by employment type ¹			
Full-time	723	291	368
Part-time	174	1	1

¹ Permanent staff only.

Workforce by category ¹	2022	
	Male	Female
Total	1,184	374
Production-related	663	168
Marketing and sales	162	72
General and administration	95	101
Research and development	264	33

¹ Permanent staff only.

Turnover by gender ¹	2022	
	Entries	Departures
Total	346	178
Male	264	132
Female	82	46

¹ Permanent staff only.

Employee Health and Safety

Both our products and our manufacturing processes require appropriate attention and compliance with health and safety standards. The basic principles for this are set out in the Quality, Environmental and Health & Safety policy. Occupational safety is ensured, practiced and documented in our management system, which covers all employees, without exception, including external or temporary service providers, i.e., anyone working on our sites and in our buildings. Depending on the location, the organization of health and safety is tailored to the size of the unit and the potential hazards.

In all locations, the local laws and regulations are reflected in how we safeguard health and safety. In Germany, for example, these include the Occupational Safety and Health Act ("Arbeitsschutzgesetz") and the rules and regulations of the Social Accident Insurance system ("Deutsche Gesetzliche Unfallversicherung"), while in Switzerland, key norms are the ten points of the Federal Coordination Commission for Accident Safety ("Eidgenössische Koordinationskommission für Arbeitssicherheit", or EKAS).

Very importantly, besides these legal and regulatory requirements and the business continuity aspect, we also have an ethical and moral obligation to our employees. We have no higher priority than to protect the safety and health of those who work for us, and we strive to reduce the number of accidents to the absolute minimum possible. As notable examples, the use of lasers and chemicals as well as the emission of ionizing radiation in our production processes require corresponding measures to protect our employees from exposure to those potentially dangerous sources.

Our management cares about the well-being of our employees and customers. The organizational units of our company and all employees are responsible for safety and health at work. We are committed to complying with the appropriate laws and safety standards and conduct annual audits, depending on location and exposure. Beyond this, we report deficiencies or violations immediately so that they can be remedied as quickly as possible or avoided in the future, and we strive for improvements in safety at work.

Preventive measures are essential to us. Occupational health and safety are regularly addressed in training or development. Each employee should feel physically and mentally comfortable at work and in the work environment.

The achievement of and improvement in occupational health and safety objectives is ensured by continuous process monitoring and review of the effectiveness of these processes. Policies and guidelines are reviewed at regular intervals to ensure that the management system is up to date and effective. If necessary, they are amended. Such reviews are also and especially triggered by changes in customer requirements.

The responsibilities for health and safety are mapped in the Comet Group management system. Essentially, the division country general manager ensures and is accountable for compliance with the local health and safety standards and procedures. Their implementation is the responsibility of the country division general managers.

Reflecting the deeply entrenched awareness of occupational health and safety in our Group, we had no fatalities in our factories in the year under review.



Occupational health and safety management in practice

Identifying work-related hazards and assessing related risks is of the utmost importance in reducing the number of accidents. In Switzerland, for example, a risk assessment is carried out by occupational physicians and other occupational safety specialists ("ASA specialists"). The risks are then classified according to the risk portfolio. To ensure the quality of these processes, a systematic revision of the portfolio is performed, and new jobs are integrated. The results then feed into the EKAS ten-point system for occupational health and safety management.

Should a work-related hazard or a hazardous situation still arise, employees and workers can report it by means of the two-part "Safer card". The first part is filled out by the employee or worker with his or her assessment, so that the hazard is immediately signposted. The second part is used by the manager to record a hazard report. The hazard must be eliminated within 24 hours. In addition, an employee may refuse to work if the situation is too dangerous for him or her, as Comet is committed to the safety charter of Suva, the Swiss Accident Insurance Agency ("Schweizerische Unfallversicherungsanstalt").

If a work-related incident occurs, an investigation is carried out. When appropriate, a root cause analysis is performed with the involvement of external specialists.

Comet has issued and integrated into its management system a comprehensive portfolio of policies and guidelines for all types of hazards, notable examples being the Comet AG Safety Regulations, the policy for external companies/contractors, and the policy for dealing with non-ionizing radiation (NIR) and noise sources. Employees and workers are involved in the development, implementation and evaluation of the occupational health and safety management system through the application of element 8 of the ten-point EKAS, which deals with the inclusion of employees. The employees are included in the planning of measures, which is especially important when purchasing personal protective equipment. Upon joining the company, continual in-depth safety training is provided depending on the employee's role. In addition, occupational health and safety is regularly addressed in training and development.

Occupational health and safety metrics ¹	2022
Injuries ²	16
Lost workdays due to work-related injuries	370

¹ The scope covers all of Comet's companies and locations.

² Recordable injuries arising out of, or in the course of work. The term "injury" is defined according to local labor law (if applicable), or otherwise according to the internal organizational provisions.

Responsible Supplier Standards

We are committed to providing our customers the highest quality supply chain that meets all established product performance standards and expectations. Our purchasing department maintains these high standards by continuously evaluating the performance of our established suppliers.

The [Supplier Code of Conduct](#) (Supplier CoC), which has been in force since January 1, 2021, is based on the Code of Conduct of the Responsible Business Alliance and sets out the basic principles and requirements for Comet suppliers and external service providers regarding their responsibility to their stakeholders and the environment. The [Supplier CoC](#) covers the following topics:

- Compliance with the law
- Prohibition of corruption and bribery
- Fair competition conditions, antitrust laws and intellectual property rights
- Conflicts of interest
- Respect for the fundamental human rights of workers
- Prohibition of child labor
- Health and safety of employees
- Environmental protection
- Supply chain
- Materials compliance

By signing the [Supplier CoC](#), our suppliers agree to abide by the principles and requirements of this Code in addition to their obligations under other contracts with us. We reserve the right to amend the requirements of the [Supplier CoC](#) to reflect changes in our compliance policies.

In general, we do not operate in business sectors or regions that pose significant risks of social responsibility violations by suppliers, including risks related to child labor or to the respect for the fundamental human rights of employees. Concerning child labor, our suppliers certify that they do not hire workers who are less than 15 years of age (in accordance with ILO Convention 138) and that they comply with the domestic standards for the protection of children. Regarding forced or compulsory labor, our suppliers certify that they respect the fundamental human rights of workers, such as, among other aspects, by refusing to hire or allow someone to work against their will.

To minimize the risk of violations of the [Supplier CoC](#), we strive for long-term partnerships with reliable suppliers. However, if a supplier has knowledge of abusive behavior by the supplier or one of our employees, or if the supplier suspects such behavior, the supplier must inform us immediately. In addition, suppliers agree that we, the

Comet Group, including our subsidiaries or designated agents (which includes third parties), may verify compliance with the [Supplier CoC](#), including through audits, on-site inspections of facilities or the review of books and records. In case of a nonconformance, we follow the procedure set out in the ISO 9001 standard. When appropriate, we work together with our suppliers to identify measures to resolve issues. However, we reserve the right to terminate the business relationship with suppliers (subject to applicable laws) if they fail to comply with the [Supplier CoC](#). We also reserve the right to take legal action against them.

Other important elements of the [Supplier CoC](#) are social and environmental aspects. By signing the code, suppliers promise, for example, to:

- Promote equal opportunity and equal rights for employees regardless of color, ethnicity, national origin, social background, disabilities, sexual orientation, political or religious beliefs, gender or age
- Not tolerate any unacceptable treatment of workers, such as psychological violence, sexual harassment or discrimination, and
- Act in accordance with applicable legal requirements and international standards regarding environmental protection.

As part of its due diligence measures in the reporting year, Comet identified minor deviations from best practices with regard to conflict minerals regulations at a small number of suppliers. This was brought to the attention of the suppliers and the situation continues to be closely monitored.

Diversity, Equity and Inclusion

We see diversity, equity, and inclusion (DEI principles) and the belonging of all people as key to our business success. We believe that by embracing diversity, we are more successful in recruiting talent, in better aligning ourselves with customers, increasing employee satisfaction, and providing a better, broader foundation for decision-making. Evidence shows that companies which cultivate diversity, equity and inclusion are more successful in the long term.

Our [Code of Conduct](#) as well as our equal opportunity employer policy state that no employee may be discriminated against by the company or by other employees. We are strongly committed to providing equal opportunity in every aspect of employment. Discrimination against employees by the company or by other employees based on nationality, ethnic origin, religion, sex, age, sexual orientation or on any other protected characteristic is strictly prohibited. No incidents of discrimination occurred in the year under review.

All job applicants are treated fairly and judged solely on their merits. We strive to maintain a recruitment process that is open, honest and fair and to build a team that represents a variety of backgrounds, perspectives and expertise. Our recruitment choices are based on objective criteria such as skills, qualifications, experience and other capabilities relevant to the job. The more inclusive we are, the better our work will be.

In 2020, Comet Technologies USA, Inc., as a frontrunner in the Group, created a Diversity, Equity & Inclusion Board with the goal of driving public awareness of Comet Technologies USA, Inc. as a diverse, equi-

table, and inclusive employer recognized by top talent, as a go-to place for exciting career opportunities and growth potential. The DEI Initiative theme for 2022 was the assimilation and retention of top talent. The DEI Board developed, trained, and helped implement the launch (with assistance from Human Resources) of the Buddy Program, which is designed to educate newly hired employees on the company and culture. In addition, the US entity continued its contract with Progressive Women Leadership (a third-party company), which focuses on empowering our female colleagues, and held its first multi-divisional fundraiser, collecting nearly USD 3,000 to feed needy people in Northern California through the charity Second Harvest.

We believe the conscious pursuit of DEI and belonging will provide benefits in business growth (top- and bottom-line), innovation, time to market, employee and customer satisfaction, and attracting and retaining top talent.

Comet received the "Fair-ON-Pay +" certification for gender pay equity for the Flamatt, Switzerland, site in 2021. The certificate is valid for four years. A brief maintenance test is carried out in year three to check whether the standard criteria are still met. We are on the right track and are committed to doing more regarding diversity, equity and inclusion in order to realize our full potential as the Comet Group.

Gender diversity of governance bodies	Male	Female	
Board of Directors	67%	33%	
Executive Committee	83%	17%	
Age diversity of governance bodies	<30	30-50	>50
Board of Directors	0%	17%	83%
Executive Committee	0%	33%	67%

Community Engagement

Our innovative power is one of our success factors. By entering into purposeful and meaningful collaborations, we let society share in our ideas, know-how and technological developments.

We believe that technology can improve education. But we also believe that, conversely, fair access to education improves technology, which provides sustainable progress, security and quality of life for all of us. This forms part of the basis of our commitment to acting in a socially and environmentally responsible manner.

Our approach to community engagement is twofold:

1. At the level of the Group: As a learning organization and a company with a long tradition of staff training and development, we pave the way to success for dozens of apprentices, interns and young professionals at any one time. Moreover, we support institutions that are committed to a similar mission in technology and education on a local and global basis. We also launch Group-wide initiatives such as our traditional fundraising before the New Year holiday season to support UNICEF in its educational program.
2. Our regional teams and sites involve themselves opportunistically at the local level in social issues. The impetus often comes from engaged employees, who are encouraged and supported in their activities by the local management.

Governance

Ethics and Compliance

Our [Code of Conduct](#) requires all employees to comply with all applicable laws and ethical standards.

The Board of Directors is responsible for the risk management process. As part of this process, Group risks are assessed twice a year in the Audit Committee. The most important points are then also reported to the Board of Directors and discussed as part of the general business risks. Material risks are systematically identified and recorded in a risk matrix.

At Group level, policies, processes, training, monitoring and continuous improvement measures are in place to maintain the highest level of ethics and compliance awareness among the workforce. Currently, Comet focuses on the following areas: (i) data protection, (ii) [Code of Conduct](#), (iii) anti-corruption, and (iv) anti-trust.

Accountability for the implementation of these topics lies with the country general managers, while responsibility for it rests with the divisions. Compliance officers report to the country general manager and support the divisions and sites in implementing the compliance requirements. Where necessary, adjustments are made in accordance with legal requirements. The responsibility for issuing rules and policies for other compliance topics, such as health protection and occupational safety, lies with the respective country general manager, and these are implemented by the country GM of the division to which the site is assigned.

The value of these structures and efforts is reflected in the fact that, in the year under review, we were not involved in legal proceedings, nor were issued significant fines, resulting from non-compliance with any laws or regulations.

Trade Compliance

When selling our products worldwide, we comply with a wide range of foreign trade laws and regulations. Under no circumstances may exports, brokering, transit or transfer by persons acting on behalf of the Company violate those trade laws and regulations. It is of utmost importance that both Comet as a company, and our products, comply with all standards and requirements related to business, ethics, quality, supplier and consumer protection. Failure to comply with these rules and regulations may result in delays in shipments to our customers, severe financial losses and other penalties imposed by international regulatory authorities. To ensure compliance, Comet has set up and implemented a Trade Compliance Policy which is integrated in the company's management system, lists the essential requirements and defines the roles and responsibilities within the global organization. In addition, it is intended not only to promote and protect personal and corporate interests, but also to ensure compliance with regard to the various supply chains.

Under our management system, the country general manager is responsible for ensuring that trade in his or her country or region is conducted in accordance with Comet's Trade Compliance Policy and applicable regulations. The organizational design and implementation are the responsibility of the country general manager. In order to meet the specific trade compliance requirements, a trade compliance officer is appointed for each country. This officer is responsible for trade compliance and is supported by trade specialists. The trade specialists and the trade compliance officer have the authority to stop transactions. We reinforce trade compliance through annual training for the appropriate employees.

In 2022, we were not defendants in legal proceedings nor were issued any significant fines for non-compliance with trade-related laws and regulations.

Economic

Customer Loyalty and Satisfaction

The needs of our customers determine our actions. As a market leader in radio frequency power and x-ray technology we serve a wide range of customers, from global market leaders to SMEs. Regardless of our customers' size and business sector, we follow four basic principles in serving each one: Ask what problem really needs to be solved and why; inspire through our expertise; provide or co-create solutions with a clear benefit; and deliver what we promise, while saying early on when we cannot meet a need.

In order for us to deliver on these principles successfully, proximity and customer loyalty are crucial. Besides best-in-class products, a strong R&D organization, local presence with skilled sales and service teams in our key markets in Europe, North America and increasingly in Asia, another pillar supporting sustainable business relationships with our customers is our effective and efficient after-sales support.

We take every opportunity to stay in close contact with our customer base, in order to share ideas with customers and to understand and anticipate technological developments. This exchange takes place at various levels: in direct interactions between the account manager and the customer, in joint teams that solve specific problems, at trade shows where we can present innovations from our portfolio, or at trade conferences such as SEMICON West. During SEMICON West in July 2022, for example, our PCT division officially launched Synertia®, our new RF power delivery platform, in the presence of customers and media representatives. A large number of meetings with important customers followed the launch, and our interactions with them have shown us that we very much struck a chord. SEMICON West is also an important trade show for IXS to position itself more strongly in the semiconductor market and increase its visibility. At the event in July, IXS representatives had many conversations with customers about new areas of application and the need to educate about and prove the value x-ray can bring to the inspection of very complex chip structures. Other SEMICON trade shows in Europe, Korea, and Taiwan gave the local Comet representatives the opportunity to discuss our solutions for supporting our customers on their growth trajectory.

Product & Technology Leadership

Serving some of the most innovative customers, we manufacture products at the frontier of what is technologically feasible. With our forward-looking technologies, we strive to be the partner of choice to the most innovation-driven companies in our markets. And we work hard to defend and expand our technology and product leadership in order to remain among the leaders in our markets in the long term.

Product leadership is not defined by technology alone. Rather, achieving it is the result of implementing key strategic decisions such as gaining market leadership for selected products or focusing on standardized products (modular standardization). These strategic issues are regularly aligned with the Technology Committee of the Board of Directors.

To remain the product and technology leader in our markets, we invest between 11% and 13% of our sales in research and development each year. Using funds effectively and efficiently, we employ 297 people in R&D – or about 19% of our total workforce – with proven R&D specialists working at all organizational levels and in all functions.

We measure our targets in terms of market share, on which we collect and analyze data regularly based on internal and external sources. We use other key performance indicators to measure how successfully we sell newly launched products. With the exception of external market share data, these KPIs are presented to and discussed with the Executive Committee at quarterly business review meetings.

Product Impact

Our products can impact society and the environment in many ways. For society, our technologies play an essential role in the manufacturing of semiconductor chips and sensors that are the central building blocks of the digital world. And environmentally, the impact begins with the sourcing of raw materials and continues through the product use stage to the end of the product's life cycle.

For Comet, assessing environmental impact is becoming more and more important. This is partly because customers are increasingly looking for products that have as little impact on the environment as possible, and partly because, going forward, we will give even greater weight to this aspect in the selection of our suppliers in order to improve our own environmental footprint.

In 2022, Comet held its first workshop on eco-design, with participants from all three divisions. By introducing the practice of eco-design at Comet, we will integrate environmental aspects into product design and development to minimize the environmental impact of our products throughout their life cycle. Eco-design has been defined as one of the ESG priorities for Comet in 2023; we are thus educating and training our staff on the concept and starting to work on selected use cases. This will improve our product development processes, in which we take great care to develop durable products that can adapt to new requirements and thus need to be replaced less often.

Product Quality & Compliance

The quality of our products and their conformity with all product-related regulations and directives are a fundamental element of our corporate culture and the basis for our business success. Our quality principles are an important argument for our customers. We are committed to providing our customers with high-quality products and services. Our products are competitive, defect-free, safe and environmentally compatible in their application and thus make a decisive contribution to the success of our customers. Therefore, we strive to avoid any risk that could compromise quality. In addition, we are committed to continuous improvement that starts with the planning of new products, activities and processes. Our management sets division- and site-specific quality objectives, provides the appropriate resources and structures and regularly reviews achievement. Internal audits, customer and certification audits, benchmarks and best practice applications help to continuously develop the quality management system.

The process responsibilities are mapped in the management system of the Comet Group. Essentially, product quality and conformity are de-

financed by the divisions, with responsibility assumed by the division country general manager and accountability resting with the respective country general manager.

Operational Excellence

The Comet Group wants to become more efficient, more flexible, and faster. Our goal is to grow into a highly profitable company with CHF 1 billion in sales and clear market leadership in each of the markets we serve. A key lever in achieving this is the pooling of resources and strengthening of the organization. Focused on global collaboration, we will continue to improve business and operational excellence.

“Operational Excellence” is a process set out in the management system, which provides the framework for making Comet a sustainable, high-performing organization. The Group function Quality & Excellence is responsible for the management system, including the process framework and architecture. Within this framework, the following tasks, among others, fall into this area of responsibility:

- Define, implement and improve Group-wide processes in close cooperation with the divisions
- Set minimum standards for non-financial KPIs for the Group and the divisions
- Monitor the state of the overall management system and prioritize improvements
- Ensure certification and compliance with ISO standards throughout the Group
- Lead the Quality & Excellence Board to drive and support collaboration and execution between divisions and corporate functions

Target achievement is monitored on the basis of defined KPIs such as the number of successfully implemented improvement projects, automated availability of the selected KPIs (for instance, cost of goods sold per unit produced, operations staff costs in percentage of net sales, and on-time delivery performance in filling customer orders), and the certification of all Comet sites to ISO 9001.

The Quality & Excellence Board acts as a committee for the person in charge of the Quality & Excellence group function. The Q&E Board supports the VP of Global Operational Excellence in implementing projects and initiatives in the divisions and corporate functions.

In 2022, we strengthened the Global Operational Excellence (“GOE”) department by combining existing functions – including Logistics, Trade Compliance, Real Estate, Environmental Health and Safety and Facilities Management, among others – under the common umbrella of the Global Operational Excellence department. By forming this center of expertise for all matters relating to operational excellence, we will leverage our power as one company by optimally aligning our business activities worldwide and learning from each other.

GRI Content Index



Comet has reported in accordance with the GRI Standards for the period from 01/01/2022 to 12/31/2022. For the Content Index - Essentials Service, GRI Services reviewed that the GRI content index is clearly presented, in a manner consistent with the Standards, and that the references for disclosures 2-1 to 2-5, 3-1 and 3-2 are aligned with the appropriate sections in the body of the report. This service was provided for the English version of the report.

GRI Standard	Disclosure	Reference*	Reason for Omission (Requirements omitted (RO), Reason (R), Explanation (E))
GRI 1: Foundation 2021			
GRI 2: General Disclosures 2021			
The organization and its reporting practices			
GRI 2: General Disclosures 2021	2 – 1 Organizational details	Comet Holding AG	
		<u>Corporate Governance Report, Group structure and shareholders</u>	
		Comet Holding AG, Herrengasse 10, 3175 Wünnwil-Flamatt, Switzerland	
		<u>Annual Report, Review of 2022</u>	
	2 – 2 Entities included in the organization's sustainability reporting	<u>Consolidated financial statements, 02.5 Consolidation</u>	
		All entities in the financial reporting are also included in sustainability reporting	
	2 – 3 Reporting period, frequency and contact point	Annually, fiscal year from Jan 1, 2022, to Dec 31, 2022	
	2 – 4 Restatements of information	<u>Corporate Governance, Contacts</u> No restatements	
	2 – 5 External assurance	No assurance	
Activities and workers			
GRI 2: General Disclosures 2021	2 – 6 Activities, value chain and other business relationships	<u>Strategy, The Comet Group</u>	
		<u>Notes to the consolidated financial statements, 01 Nature of the business activities</u>	
		<u>Consolidated financial statements, 02.5 Consolidation Report in Accordance with GRI Standards, Responsible Supplier Standards</u>	
	2 – 7 Employees	<u>Consolidated financial statements, 04.1 Operating segments</u>	
		<u>Report in Accordance with GRI Standards, Employer Attractiveness</u>	
		<u>Separate Financial Statements of Comet Holding AG, 10 Number of full-time equivalents</u>	
	2 – 8 Workers who are not employees	120 workers hired through an agency, mainly in production (assembly); in head count, at the end of the reporting period; no significant fluctuations in the reporting year	
Governance			
GRI 2: General Disclosures 2021	2 – 9 Governance structure and composition	<u>Corporate Governance, Board Committees</u>	
		<u>Corporate Governance, Board of Directors</u>	
		<u>Sustainability Report, Sustainability governance and organization</u>	
	2 – 10 Nomination and selection of the highest governance body	<u>Corporate Governance, Board election and terms, internal organization</u>	
	2 – 11 Chair of the highest governance body	The Chair of the Board of Directors is not a senior executive in the organization	
	2 – 12 Role of the highest governance body in overseeing the management of impacts	<u>Corporate Governance, Board of Directors</u>	
		<u>Sustainability Report, Sustainability governance and organization</u>	

	2 – 13 Delegation of responsibility for managing impacts	<u>Sustainability Report, Sustainability governance and organization</u>
	2 – 14 Role of the highest governance body in sustainability reporting	<u>Sustainability Report, Sustainability governance and organization</u>
	2 – 15 Conflicts of interest	<u>Board of Directors: Corporate Governance, Disclosure of potential conflicts of interest</u> <u>Executive Committee: Corporate Governance, Disclosure of potential conflicts of interest</u>
	2 – 16 Communication of critical concerns	Through AGM or other functions (e.g., IR) via CEO. Concerns regarding the departure of CEO Crofton were addressed by the Board of Directors and the Nomination & Compensation Committee.
	2 – 17 Collective knowledge of the highest governance body	The majority of the members of the Board of Directors are members of the board or management of other listed companies that are advanced in sustainability. Quarterly report on sustainability developments to the Board. <u>Corporate Governance, Board of Directors</u>
	2 – 18 Evaluation of the performance of the highest governance body	Board of Directors conducted a self-assessment with an external Board Advisor in 2022.
	2 – 19 Remuneration policies	<u>Compensation report, 03 Determination of compensation and compensation principles</u> <u>Corporate Governance, Nomination & Compensation Committee</u>
	2 – 20 Process to determine remuneration	<u>Compensation report, 03.1 Determination of compensation</u>
	2 – 21 Annual total compensation ratio	Comparable ratio of 20; total compensation was down in 2022 vs. 2021 (lower variable compensation)
Strategy, policies and practices		
GRI 2: General Disclosures 2021	2 – 22 Statement on sustainable development strategy	<u>Sustainability Report, Statement of the CEO</u>
	2 – 23 Policy commitments	<u>Report in Accordance with GRI Standards, Supplier Code of Conduct</u> <u>Report in Accordance with GRI Standards, Trade Compliance</u> <u>Report in Accordance with GRI Standards, Ethics and Compliance</u>
	2 – 24 Embedding policy commitments	<u>Report in Accordance with GRI Standards, Supplier Code of Conduct</u> <u>Report in Accordance with GRI Standards, Trade Compliance</u> <u>Report in Accordance with GRI Standards, Ethics and Compliance</u> <u>Sustainability Report, Human rights statement</u>
	2 – 25 Processes to remediate negative impacts	<u>Report in Accordance with GRI Standards, Supplier Code of Conduct</u> <u>Report in Accordance with GRI Standards, Trade Compliance</u> <u>Report in Accordance with GRI Standards, Ethics and Compliance</u>
	2 – 26 Mechanisms for seeking advice and raising concerns	<u>Sustainability Report, Achievements in 2022 (integrity hotline)</u>
	2 – 27 Compliance with laws and regulations	<u>Report in Accordance with GRI Standards, Ethics and Compliance</u> <u>Report in Accordance with GRI Standards, Environmental Management System and Compliance</u>

		Report in Accordance with GRI Standards, Trade Compliance
		Report in Accordance with GRI Standards, Employee Health & Safety
	2 – 28 Membership associations	SEMI (global industry association that encompasses the entire electronics manufacturing and supply chain), EUROBAT, JIMA (Japan Inspection Instruments Manufacturers' Association, Swiss Malaysian Chamber of Commerce)
Stakeholder engagement		
GRI 2: General Disclosures 2021	2 – 29 Approach to stakeholder engagement	Sustainability Report, Material Topics
	2 – 30 Collective bargaining agreements	Less than 5% of employees are covered by bargaining agreements. For employees not covered by collective bargaining agreements, we regularly benchmark the working conditions and terms of employment against organizations with collective bargaining agreements. Overall, our working conditions and terms of employment are superior compared to organizations with collective bargaining agreements.
		Report according to GRI Standards, Employer Attractiveness
GRI 3: Material Topics 2021		
	3 – 1 Process to determine material topics	Sustainability Report, Material topics
	3 – 2 List of material topics	Sustainability Report, Material topics
Environmental		
Materials Compliance		
GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Materials compliance
Environmental Management System and Compliance		
GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Environmental Management System and Compliance
Energy Management and Carbon Emissions		
GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Energy Management and Carbon Emissions
GRI 302: Energy (2016)		
GRI 302 – 1	Energy consumption within the organization	Report in Accordance with GRI Standards, Energy Management and Carbon Emissions
GRI 302 – 4	Reduction of energy consumption	Report in Accordance with GRI Standards, Energy Management and Carbon Emissions
GRI 302 – 5	Reduction in energy requirements of products and services	Sustainability Report, Climate roadmap Sustainability Report, Climate roadmap
GRI 305: Emissions (2016)		
GRI 305 – 1	Direct (Scope 1) GHG emissions	Report in Accordance with GRI Standards, Energy Management and Carbon Emissions (table)
GRI 305 – 2	Energy indirect (Scope 2) GHG emissions	Report in Accordance with GRI Standards, Energy Management and Carbon Emissions (table)
GRI 305 – 5	Reduction of GHG emissions	Sustainability Report, Climate roadmap
Social		
Employer Attractiveness		
GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Employer Attractiveness
GRI 401: Employment (2016)		
GRI 401 – 1	New employee hires and employee turnover	Report in Accordance with GRI Standards, Employer Attractiveness

GRI 404: Training and Education (2016)		
GRI 404 – 2	Programs for upgrading employee skills and transition assistance programs	Report in Accordance with GRI Standards, Employer Attractiveness
Employee Health and Safety		
GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403: Occupational Health and Safety (2018)		
GRI 403 – 1	Occupational health and safety management system	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403 – 2	Hazard identification, risk assessment, and incident investigation	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403 – 3	Occupational health services	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403 – 4	Worker participation, consultation, and communication on occupational health and safety	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403 – 5	Worker training on occupational health and safety	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403 – 6	Promotion of worker health	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403 – 7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403 – 8	Workers covered by an occupational health and safety management system	Report in Accordance with GRI Standards, Employee Health and Safety
GRI 403 – 9	Work-related injuries	Report in Accordance with GRI Standards, Employee Health and Safety (table)
Responsible Supplier Standards		
GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Responsible Supplier Standards
GRI 308: Supplier Environmental Assessment (2016)		
GRI 308 – 1	New Supplier Screening Using Environmental Criteria	Report in Accordance with GRI Standards, Responsible Supplier Standards
GRI 408: Child Labor (2016)		
GRI 408 – 1	Operations and suppliers at significant risk for incidents of child labor	Comet does not operate in businesses or regions that pose significant risks, including risks related to child or forced labor or to the respect for the fundamental human rights of employees
GRI 409: Forced or Compulsory Labor (2016)		
GRI 409 – 1	Operations and suppliers at significant risk of incidents of forced or compulsory labor	Comet does not operate in businesses or regions that pose significant risks, including risks related to child or forced labor or to the respect for the fundamental human rights of employees
GRI 414: Supplier Social Assessment (2016)		
GRI 414 – 1	New suppliers that were screened using social criteria	Report in Accordance with GRI Standards, Responsible Supplier Standards
Diversity, Equity and Inclusion		
GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Diversity, Equity and Inclusion
GRI 405: Diversity and Equal Opportunity (2016)		
GRI 405 – 1	Diversity of governance bodies and employees	Report in Accordance with GRI Standards, Diversity, Equity and Inclusion
Community Engagement		

GRI 3: Material Topics 2021	Management of material topics	Report in Accordance with GRI Standards, Community Engagement
GRI 413: Local Communities		
GRI 413 – 1	Local Community Engagement, Impact Assessments, and Development Programs	Report in Accordance with GRI Standards, Community Engagement
Sustainability Report, Social achievements in 2022		

Governance**Ethics and Compliance**

GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Ethics and Compliance
GRI 205: Anti-Corruption (2016)		
GRI 205 – 3	Confirmed incidents of corruption and actions taken	Report in Accordance with GRI Standards, Ethics and Compliance
GRI 206: Anti-competitive Behavior (2016)		
GRI 206 – 1	Legal actions for anti-competitive behavior	Report in Accordance with GRI Standards, Ethics and Compliance

Trade Compliance

GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Trade Compliance
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Economic**Customer Loyalty and Satisfaction**

GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Customer Loyalty and Satisfaction
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Product and Technology Leadership

GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Product and Technology Leadership
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Product Impact

GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Product Impact
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Product Quality and Compliance

GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Product Quality and Compliance
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Operational Excellence

GRI 3: Material Topics 2021	3 – 3 Management of material topics	Report in Accordance with GRI Standards, Operational Excellence
GRI 201: Economic Performance (2016)		
GRI 201 – 1	Direct economic value generated and distributed	Annual Report, Performance
Annual Report, Comet Group key consolidated financial results		

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Communications, Flamatt

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(photos of EC and BoD,
SmartLab)
Wikimedia Commons,
User: Zonk43 (Wertachtal)
Wikimedia Commons,
User: Superikonoskop
(Fall of the Berlin Wall)
Comet Group

Video

12m2 Studio, Lausanne (recording
of interview with Bertrand Piccard)
Longtail Media, Aarau (recording
of interview with Antonia Neels)
Pitchlab, Paris (Technology and
"2022 financials in 90 seconds"
videos, video editing)
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In the event of discrepancy or
dispute, the English version shall
govern.

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